ABSTRACT OF THE

Morison Lectures

ON THE

RELATION OF THE NERVOUS SYSTEM TO DISEASE AND DISORDER IN THE VISCERA.

Delivered before the Royal College of Physicians of Edinburgh on Nov. 1st, 3rd, and 5th, 1897,

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LECTURE III.[1]

Delivered on Nov. 5th, 1897.

THE PHYSIOLOGY OF VISCERAL CONTROL.

MR. PRESIDENT AND GENTLEMEN.—In considering the relation of the nervous system to secretion, visceral motion, and excretion I desire to touch upon some points in the more recent conceptions of physiologists which are at variance with the views of many of their predecessors and which are still open to discussion. As regards secretion, for example, it may be permitted to inquire what a nerve of secretion is? Secretion like every other form of distal motion being a peripheral, outgoing, or efferent event in its active phase, its immediately regulative nerves belong necessarily to the outgoing or executive series. They are motor nerves. Secretion, however, like every other peripheral activity, is not solely caused by influences entering or leaving a gland and its associated territory. The secreting cell, like the muscle cell, comes into being before, so far as we know at present, it is in touch with nerve elements. There is doubtless, therefore, an essential secretory irritability as there is an essential motor irritability. But the length of time for which either secretion or motion could continue in an independent organism when a given organ is severed from its nerve supply is admittedly a limited period, and the actual length of this appears to be shorter in an inverse ratio to the complexity of the organism as a whole. Thus the reptile survives longer than the mammal when the main innervation of viscera essential to life is divided.

Without aspiring to be defined, as a learned judge is said to have defined the metaphysician—namely, as a blind man looking for a black hat in a dark room, the hat in question not being there—it is permissible to consider with caution and with a just sense of our limitations the centre or centres of energy in the animal economy without reference to the manner in which force is produced or reproduced. As sensation in one phase or another precedes motion in one form or another in more complex and fully developed animals, it may be assumed that the initiating centres of energy are in the sensory portion of the nervous system and that it flows thence down the efferent streams of innervation.

We have seen in the anatomical section that the afferent nerves pass, so far as can be ascertained, through the ganglia which intervene between the periphery and the centre without the interruption of arborisation on intervening cells. The exploded energy on the other hand, travelling down the efferent nerves, encounters innumerable arborisations on intercepting ganglion cells and, like the current of a stream flowing towards its outlet into the ocean, splits or may split into as many fresh channels as arise between the centre and periphery. These fresh channels arise, we have seen, from the innumerable ganglion cells which are formed on the trunk and branches of the efferent system of nerves, cells which transmit and are permeated by the outflowing energy. The question then is, What is the relation of these cells to this energy?

When Langley by the general and local use of nicotine[2] showed that after paralysis of ganglionic cells stimulation of post-cellular fibres could still induce peripheral results he in no way indicated all the functions of the paralysed cell. The question of a peripheral reflex from these cells may, it is true, be regarded as answered in the meantime in a negative sense by physiologists; but the question of a possible storage of peripheral energy in efferent ganglia is not settled by the disproval of a true nerve reflex at the periphery. These cells we have seen are acknowledged to have the power of producing axis cylinders, that is nerve fibres, but are denied other properties than a vague nutritive quality, and the function of distributing a nerve-supply over a wider area than would be possible to the cerebro-spinal fibres alone which enter the ganglion.

The eviscerated heart which when pricked contracts does so, in the light of the fully resuscitated Hallerian theory of nerveless rythmicality, by the explosion of non-neural energy in the muscle fibre. But this is surely an absolute assumption? The assertion, moreover, that this phenomenon can be induced in muscle, assumed likewise to be devoid of nerve supply, must also, we have seen, be regarded with more than scepticism because such nerveless territories have in more than one instance been shown by improved methods of staining to be well supplied with nerves.

The conclusion therefore seems warrantable, until indubitable proof to the contrary has been adduced, that, at least in the fully developed organs of more complex animals, persistent rhythmicality has its proximate and always subordinate centres in the efferent stream of innervation. No one, it appears to me, who has seen the perfect consecutive contraction of the auricles and ventricles in a recently killed animal can avoid the belief that no theory of mere inherent rhythmicality can fully account for this phenomenon. The same lesson appears to be taught by the disorders of rhythmical action observed by the clinician and with which we shall be concerned in a subsequent lecture.

What I have said with regard to cardiac rhythmical action seems to me to apply equally to viscero-motor and vaso-motor action elsewhere. Among rhythmically contracting organs we must also include the arteries and some veins, and the extra-neural situation of ganglia on nerve trunks regulating the vascular supply of such an excretory organ as the kidney seems likewise to suggest that a subsidiary storage of energy in these nerve producing cells is not incompatible with the trophic power more generally conceded to them.

To return to the analogy between secretory and viscero motor innervation, it will be remembered that I described two kinds of ganglia in connexion with the heart—namely, those on the trunks of efferent nerves and those which lie in the intervascular fat at the base of the heart and under the epicardium, it may be close to such efferent trunks but apparently unconnected with them. They also occasionally lie, as has been stated, in close relation to bloodvessels. The latter kind appear to be the distal ganglia of the sympathetic system and probably differ in function as they do in anatomical character from the ganglia of the vagal stream. The deeper relations of these varieties of ganglia to one another are not easy to determine but it is as improbable that they should lose their individuality as it is unlikely that the fibres of their respective nerves should anastomose at the periphery. They doubtless each supply nerves which have a common destination—namely, the muscle cells of the heart and of the vascular system pervading it.

I consider it probable that the term common to the two streams of innervation, which both contain sensory and motor elements, is the muscle cell itself and that the stimulus which calls the one or the other system into predominant activity is physico-chemical in nature and due to cross stimulation of the two sets of nerves. By cross stimulation I mean the stimulation of one set of nerves by the products of the activity of the other. The chemical stimuli, if chemical they be, would I presume be termed by Gaskell anabolic or catabolic according as they were the result of retardation or of acceleration of muscular action. The cross action is probably reflex in character, the anabolic products of retardation stimulating the accelerant sensory nerves while the catabolic products of acceleration excite the afferent sensory fibres of the vagus.

Yielding all over the body to the perpetual encroachments of its predominant partner, the cerebro-spinal nervous system, the last refuge of the sympathetic vainly struggling to be free, was what has come to be known as the hypogastric reflex. This may be observed when the inferior mesenteric ganglion is separated from all its connexions with the spinal

[1] Lectures I. and II. appeared in THE LANCET of Jan. 1st and 8th, 1898, respectively.

[2] Journal of Physiology, vol. xv., 1893, p. 181.

cord and when in addition one of the hypogastric nerves issuing from it to supply the bladder is divided. Stimulation of the central end of the latter by electricity is observed in some cases to be followed by muscular contraction of the bladder. To account for such a phenomenon on the assumed residual integrity of some portion of the connexions of the ganglion with the cord does not appear to be quite necessary. Electricity will be conducted by a continuity of conductive material in various directions and the simplest explanation seems to me to be the mechanical stimulation of structures storing and conveying efferent energy—that is, of the ganglionic cells and their centrifugal fibres—in the ganglion in question.

Before leaving the subject of the efferent passage of energy into the viscera I desire to make a few remarks upon the question as to whether there is any reason to suppose that the progress of the efferent current is influenced by the anatomical character of the chain it traverses. If Kölliker be correct in his belief that visceral afferent fibres reach the centre without arborising on intervening ganglion cells, except in so far as they arise from the ganglia on the posterior roots, while it is admitted that the whole efferent stream of visceral innervation undergoes the interruption or complication of cellular arborisation before ultimate distribution, it might *a priori*, be supposed that such an anatomical difference implied some distinction other than the broad one known to exist between these currents—namely, the sensory nature of the one and the motor nature of the other.

As regards the sensibility of the viscera, the experience of the physiologist, of the surgeon, and of the physician alike, serves to show that its conditions are peculiar. As Professor Foster[3] states, "in respect to all structures other than the skin and nerves, to such structures—namely, as muscles, tendons, ligaments, bones and viscera generally, there is a large amount of experimental and clinical evidence showing that so long as these are in a normal condition experimental stimulation does not give rise to any distinct change of consciousness; a muscle or tendon, the intestine, the liver, or the heart may be handled, pinched, cut or cauterised without any pain or indeed any sensation at all being felt or any sign of consciousness given. Nevertheless when the parts are in an abnormal condition even slight stimulation may produce a very marked effect in consciousness." When we arrive at the clinical portion of these lectures this question will meet us again. My object in referring to these points at present is to emphasise the fact that our perception of pain arising from visceral causes may be as acute as any capable of being generated elsewhere, and that the nature of sensibility except in the skin does not differ appreciably in the somatic and splanchnic divisions of the nervous system.

On the other hand, be the condition of the viscera what it may our voluntary control over the efferent stream of innervation flowing towards them is equally small. The channel to our perceptions, in other words, from the viscera to the brain is potentially quite open; the channel for our will is, somehow, blocked between the brain and the viscera. The emotions, however, affect the viscera as easily as they do the parts supplied by the somatic nerves. The difference, one is tempted to say, between the emotions or feelings and the will is the difference between the afferent and efferent sections of the nervous system, the emotions being sensory and the volitions sensori-motor.

The emotion which arrests the heart's action and checks digestion appears to be a descending inhibition liberating, on the theory advanced, products which under normal conditions of the muscle and secretory cell provide sooner or later a cross stimulation of the complementary sympathetic visceral nerves and hurry the heart into catabolic activity. Whether this holds good also in the case of the gastric and other secretions and a complementary sympathetic juice comes to the aid of the inhibited vagal secretions we cannot so far as I known, positively assert at present. But such experimental evidence as we possess does not appear to contradict such a notion.

The re-habilitation of the scientific reputation of ancient worthies in the sphere of splanchnic physiology is a noteworthy phenomenon. Haller has many supporters of his theory of nerveless rhythmicality in the present day. Remak's accuracy has been vindicated by Paterson in his embryological study of the sympathetic system. I also venture to recall the name of an almost forgotten physician whose views appear to me to contain an element of truth which has not been altogether discredited by subsequent research. Dr. James Johnstone, an Edinburgh graduate, in his "Essay on the Ganglions of Nerves," published at Shrewsbury in 1771, maintained some theses which cannot be supported with our present knowledge of the subject. But in so far as he regarded ganglia as "checks to the process of volition" (p. 22), and if we restrict our meaning to ganglia of the efferent stream it appears to me that these structures in their histological condition and physiological behaviour support Dr. Johnstone's opinion. Did the efferent stream pass through the peripheral ganglia without arborising on nerve producing cells, as Kölliker considers the afferent stream does, it is highly probable that our voluntary control of the viscera, if spasmodic, would in any case be as decided as is our perception of pain under certain circumstances when the afferent stimulus is originated in the vegetative organs of the body.

In a discussion preliminary to the consideration of the relation of the nervous system to visceral disease and disorder it is necessary to refer to the connexion between the manifested force which we call "mind" and the non-cogitative functions which we term "body." It will be remembered that in examining the sources of the vago-glosso-pharyngeal nerve in the medulla that view was adopted of the nature of the nucleus, usually regarded as the sensory root of this important nerve stream, which considers it to be a gathering point for afferent fibres of the vagal system whence they are connected with other nerves and with more remote portions of the encephalon. The very general terms I employ in making this statement are a measure of our present ignorance as to particular knowledge on this point. We appear, however, to be justified in regarding the opinion expressed as correct. Ramon y Cajal has described and figured a direct connexion between fibres of the vagus and the ascending root of the fifth nerve and it is very reasonable to expect that continued investigation of this region and of the paths whereby sensory impulses pass from the cord to the cortex cerebri, by staining methods and induced degeneration will prove, still more certainly, that intimate connexion between visceral innervation and the higher nerve centres, which we know on physiological grounds to be quite unquestionable.

It is necessary, therefore, in connexion with our present theme, to inquire shortly into the nature of those encephalic influences and stimuli which such lines of neural conductivity bring to bear upon the viscera and by which the viscera also influence the activity of the higher centres. Were we to be guided by Professor Bain's definition of a definition—namely, that "a definition should itself be intelligible and composed of terms not standing in need of further definition,"[4] it would be hazardous to proffer any definition of mind. Inasmuch, however, as we as physicians must have some more or less definite conception of the forces with which we have to deal, we may be pardoned if we attempt to formulate to ourselves in the generation in which we live, some proximately adequate verbal equivalent for so wide and mysterious a force, even though our mental grasp should embrace but a very small portion of it. With this apology our present knowledge appears to warrant our regarding mind as a mode of vital motion manifested by some cells of the cerebral cortex and as the more or less permanent product or effect of such motion, which we call memory.

Every form of functional activity alters the conditions of the structure manifesting it. This is true of the secreting cell throughout the body. It is no less true of the cells, whose activity results in the manifestation of mind. On a former occasion Dr. Batty Tuke interestingly described the changes which have been observed to result from the normal and artificial stimulation of nerve cells, their obscuration and irregularity induced by wakefulness and work, and their restoration of contour and original character by sleep and rest. Brain cells and the cells of the spinal centres thus, like digestive or salivary cells, manifest changes indicative of work and non-work. When, however, we come to the question of the registration of impressions without apparent anatomical change of parts we arrive at a theme which must still be treated entirely hypothetically, but changes associated with which must, nevertheless, be regarded as existent. Our inability to explain memory and many other

[3] Text-book of Physiology, p. 1420.

[4] The Senses and Intellect, p. 2.

elements of mind does not shake our conviction that all these are the results of cellular activity.

For us as physicians and in connexion with our present theme it is enough that no manifestation of mind can occur without cellular excitation and that such cells are portions of an organism which is one and indivisible however various the functions of its several organs. These cellular activities and persistent impressions are proper to all animal life and are capable of influencing the organism manifesting them for good or for evil. In the microcosm of man, however, we have to deal with a development of ideation as peculiar to him as the maintenance of the erect position. When Mephistopheles wrote in the album of the young student, "Eritis sicut Deus, scientes bonum et malum," that profound judge of human nature added as the awestruck boy withdrew, and with something as nearly approaching a sigh as his highness was capable of, "A weary man thy likeness to the gods will make of thee." This likeness to the gods, however indistinct at times that image may become, the physician has to bear in mind in every department of the healing art outside the sphere of veterinary medicine. Such stimuli by efferent channels act in promoting the health and life or disease and death of the viscera and of the body of which they are a part. Physical disorders, on the other hand, which impair the nutrition of the centres of vital force directly or indirectly produce similar results in various ways with varying rapidity and in varying measure.

How often, for example, do we encounter cases in practice in which the weariness of life causes the patient to desire death when the actual causes of disturbed health or happiness appear to us quite inadequate to account for so much distress. And, again, how frequently do we observe the desire to live to be strong in those the cessation of whose discomfort can only coincide with the termination of life. This despondency in some cases, this unquenchable hope of recovery on the brink of dissolution in others, as also the anxious or calm and heroic struggle for life in yet others, are noteworthy phenomena and reveal to us how complex a creature we have to deal with in man. Could we explain more fully the organic relations of the *tædium vitæ*, of the *spes vivere*, and of that *magna quies*—that grand repose manifested in face of the still greater quietude of death—we should have made a considerable advance in our knowledge of the relation of the nervous system to visceral disease and disorder. To a humble study of some such points in the pathology of visceral control and the clinical phenomena observed when such control is impaired I purpose devoting the remainder of this course of lectures appreciating full well the difficulty of the subject and also my own inability to do it justice.

ŒSOPHAGO-ENTEROSTOMY AFTER TOTAL EXTIRPATION OF THE STOMACH.

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Specially Translated for THE LANCET.

FOR the title of the present paper I have selected the newly-coined expression "Œsophago-enterostomy," my reason being that the phrase "total extirpation of the stomach" as used in the most recent literature is not understood in the strict sense of the word and there is a danger that in the present case a part may be taken for the whole. The few cases which have hitherto been recorded in literature as instances of total resection of the stomach prove on closer examination not to be exactly as described, for without exception a small portion of the stomach, chiefly of the cardiac end, was left behind. Even in the case of the celebrated dog on which gastrectomy was performed by Czerny and Kaiser in 1876, and which so to say lived without a stomach for five years, it was found on post-mortem examination that a small portion of the cardiac end of the stomach wall still remained. I am in the happy position of being able to-day to refer to a patient on whom I have successfully performed an absolutely complete removal of the stomach and have restored the interrupted continuity of the digestive tract by uniting a loop of the small intestine to the end of the œsophagus.

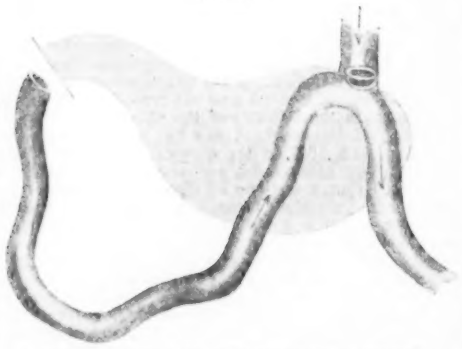
The patient is a woman, fifty-six years of age; she is a silk-winder and has no family history of carcinoma. Even as a child she always suffered from pains in the stomach, since the food in the orphanage where she was brought up was very bad. In later years she frequently suffered from pain in the stomach and vomiting. She has vomited every day since Whitsuntide, 1897. There was bile in the vomit, but blood was never found. The drugs prescribed by a medical man had no effect. Some weeks before she entered the hospital a second medical man was consulted, who recognised a tumour in the left side of the abdomen and recommended hospital treatment. I saw the patient for the first time on Aug. 26th, 1897, in the Surgical Poliklinik. When the abdomen was uncovered a prominence between the left margin of the thorax and the umbilicus immediately came into view. On palpation through the extremely relaxed abdominal walls there could be felt in the gastric region a hard tumour of an elongated oval form of about the size of two fists and remarkably moveable. The patient, who was emaciated to the utmost, complained that she vomited every kind of food alike, even milk, and wished to have an operation performed under any circumstances. I feared that with a tumour of this size resection of the stomach could not be accomplished and that it would be found that the condition of the walls of the stomach would not admit of gastro-enterostomy, but I admitted the patient into the surgical department for the sake of observation and inquiry. She vomited almost all liquid nourishment a short time after it was taken. (The iodide of potassium reaction in the saliva did not appear in less than forty-seven minutes.) Examination of the gastric juice yielded no trace of free hydrochloric acid.

On Sept. 6th, acting as locum tenens for Professor Kröalein, I undertook an exploratory laparotomy in order to gain a more precise knowledge of the tumour and if possible also to decide the question of excision or gastro-enterostomy. Anæsthesia having been induced by morphia and ether I opened the peritoneal cavity with the most careful aseptic precautions by an incision in the linea alba extending from the ensiform process to the umbilicus. As I had feared from the results of the external examination the whole stomach, from the pylorus up to and including the cardiac portion, was converted into a singularly hard but quite moveable tumour which could be easily withdrawn from the peritoneal cavity. On the great curvature towards the pylorus there were three small lymph glands which were soft to the touch. I could not perform gastro-enterostomy because the entire stomach presented no healthy portion and nothing remained for me but either to attempt total resection or else to have recourse to jejunostomy. For obvious reasons I preferred the former alternative.

After shutting off the peritoneal cavity with sterilised compresses I isolated the stomach on its great and small curvatures, separating the great and the small omentum with the aid of Péan's clamps and ligaturing the clamped portions with silk. I then pulled it firmly downwards in order to obtain access to the œsophagus. The left lobe of the liver which covered the field of operation was held up constantly by the hand of an assistant, in which way we succeeded in applying a Wölfler's compressorium to the œsophagus tolerably high up. I applied a Stille's clamp quite close to the cardiac border of the tumour and separated the stomach from the œsophagus just at their point of junction. The direction of the incision happened to be somewhat oblique, so that I found it to be advantageous to reduce the aperture of the œsophagus by means of a small suture. The pylorus was treated in exactly the same way. The duodenum was freed as far as possible towards the head of the pancreas and the stomach together with the pylorus was separated between a "duodenum compressorium" applied as far away as possible and a "tumour compressorium" applied to the duodenal region. The aperture of the portion of the duodenum which remained *in situ* was cleansed with pads of iodoform gauze just as had been already done in the case of the aperture of the œsophagus. An extensive portion in the continuity of the digestive tract was now cut away. I endeavoured to draw up the end of the duodenum to the end of the œsophagus, but it was only with the greatest difficulty that I could bring them into contact, so that the union of the two orifices was not to be expected. I turned in the border of the duodenum and closed the aperture with a double suture.

Starting from the duodeno-jejunal fold I followed the small intestine downwards for about thirty centimetres (12 in.), drew it out at that point, brought it across the transverse colon, and applied it to the end of the œsophagus (see Fig. 1).

FIG. 1.



Lateral anastomosis of the œsophagus and small intestine.

A piece of the small intestine about ten centimetres (4 in.) long being held in Wölfler's compressors the intestine was fixed to the œsophagus by suturing the serous membrane, after which it was incised for about one and a half centimetres (0·6 in.) in the direction of its length and the mucous membrane of the œsophageal part was united in its whole circumference with the mucous membrane of the intestine by means of a continuous circular silk suture. A suture of continuous muscular and serous tissue and a Lembert's interrupted silk suture were applied over the suture of the mucous tissue. The compressors on the small intestine as well as the one on the extremity of the œsophagus, which latter had been in position for more than two hours, were removed. When returned to the peritoneal cavity the sutured parts retracted themselves upwards with some force to the place where the œsophagus traverses the diaphragm. The abdominal walls were closed with continuous silk suturing of the peritoneum and interrupted silk suturing of the fascia and skin. The anæsthesia (230 c.c.—i.e., 8 fluid ounces—of ether) progressed quietly. The pulse after the operation was regular, tolerably full, and 96 per minute.

The excised stomach had on its great curvature a length of twenty-eight centimetres (11 in.) and on its small curvature a length of twenty centimetres (8 in.); the greatest distance between the two curvatures amounted to ten centimetres (4 in.). Its internal diameter was so extremely reduced that at either end a forefinger could only be inserted with difficulty. In order to obtain a decisive opinion as to the extent of the resection I cut off small portions from each end of the excised stomach, sent them to the Pathological Institute for examination, and received a report from Professor Ribbert as follows: "Of the specimens inquired about the one from the cardiac extremity is œsophagus and the other is duodenum." The anatomical description of a portion taken from the tumour of the stomach was "small-celled alveolar glandular carcinoma" ("klein alveoläres Drüsenzellencarcinoma"). The attached lymph glands were not carcinomatous.

Soon after the operation the patient was given an enema containing brandy and two eggs. Her evening temperature was 36·4° C. (97·6° F.). On Sept. 7th she had two nutritive enemata of milk, eggs, and brandy. The pulse was very rapid, being 142 per minute, but it was tolerably firm. The evening temperature was 37·3° C. (99·0° F.). Even as early as the afternoon of this day she had some tea and milk by the mouth and they were taken quite well. There were no symptoms of peritonitis. On Sept. 8th a half glass of Bordeaux was taken at mid-day by teaspoonfuls. The nutrient enemata were discontinued. In the evening the temperature rose to 38·1° C. (100·6° F.), the pulse also rose to 160, remaining however tolerably firm. The patient complained of pains in the region of the stomach coming on suddenly and soon disappearing. On Sept. 9th the subjective conditions were much better. Pepsin and hydrochloric acid were added experimentally to the diet, which consisted of milk, eggs, soup, wine, &c., taken in small quantities at intervals of two hours. The pulse was 146 and satisfactory. The highest temperature for the day was 38·1° C. (100·6° F.). On Sept. 13th the dressings were changed for the first time. The wound was completely healed by primary union without reaction. The stitches were removed. The patient took some scraped meat to-day. The first action of the bowels after the operation took place on Sept. 10th, since which date the patient has had from two to three liquid evacuations daily. Now and then the milk which had been taken was brought up, but without actual vomiting. On Sept. 16th the patient felt herself very well in all respects. The temperature had returned to the normal point; the pulse had fallen to about 100; there was slight diarrhœa. Her dietary was tolerably ample in amount, being as follows: Two decilitres (7 fluid ounces) of milk and an egg at 7 A.M. and again at 9 30 A.M.; at mid-day some tender meat, scraped or minced, or a cup of gruel; at 4 P.M. a cup of gruel with an egg, or two decilitres of milk with an egg; at 7.30 P.M. a cup of milk or gruel. In the intervals she drank from 150 to 200 grammes (from 6 to 8 fluid ounces) of tea or Malaga in the course of the day. She vomited to-day for the first time as the result of a feeling of nausea occasioned by another patient in the ward having her dressings changed. She went through the forcible movements of vomiting and brought up about 100 c.c. (3½ fluid ounces) of a bile-stained, faintly sour-smelling liquid.

On Sept. 26th she had half of a fowl at mid-day and ate all the remainder of it at 4 30 P.M. At 6.30. P.M. she took the usual allowance of milk with egg. At 7.30 P.M. she was sick, the abdominal muscles contracting powerfully and the act of vomiting being energetic. She brought up about 300 c.c. (10½ fluid ounces) of liquid, the greater part of which evidently was the milk that had been taken an hour before, together with fibres of meat from the repast at 4.30 P.M

FIG. 2.

Photograph of patient taken on Nov. 22nd, 1897, eleven weeks after the removal of her stomach.

Shortly before vomiting she complained of bitterness and a taste of bile in her mouth. On Oct. 2nd and Oct. 4th she vomited again about 200 c.c. (7 fluid ounces) of yellowish masses, free from fæcal odour, about an hour after taking food; some portions of egg were floating unchanged in the vomited matter. On Oct. 8th about 150 c.c. (5¼ fluid ounces) of mucous fluid, yellowish but not flocculent, which had been vomited three-quarters of an hour

after taking milk and egg, were sent to the chemical laboratory of the Medical Klinik. According to the chemical report annexed to the history of the case, the vomited matter had an acid reaction, contained lactic acid, but no free hydrochloric acid, and evidently possessed the qualities of the ferment trypsin. Biliary acids and bile colouring matter were also present. (The prescription of pepsin and hydrochloric acid had been discontinued for some time.) The patient (see Fig. 2) left her bed for the first time on Oct. 11th. On Oct. 25th she felt herself extremely well in all respects; she had by this time been taking short walks in the garden for some days. Her weight increased continually in a gratifying manner. Unfortunately the precise recording of the weight was discontinued as the patient improved, but she must have gained at least 2 kilos. (4½ lb.) up to Oct. 5th, on which day she was first weighed after the operation, the length of time for this increase being therefore about a month. In the ensuing week her weight rose from 33·6 kilos. to 33·75 kilos. (from 74 lb. to 74¼ lb.). A week later it reached 35·26 kilos. (77½ lb.), and to-day (Oct. 30th) it has risen to exactly 36 kilos. (79 lb.). On the whole she has therefore gained in weight about 4·4 kilos. (9½ lb.) since the operation, that is in about two months.[2]

I have now to enter into details on a technical point. Langenbuch remarks[3] with reference to his cases of gastrectomy: "Neither of our two resections of the stomach were absolutely complete. Such an operation would be hardly practicable on account of the relations of the cardiac portion which, moreover, like the head of the humerus, has its anatomical and its surgical neck. But having regard to these considerations our two operations may be correctly described as total resections of the stomach, for in both of them as much was taken away as appeared at all possible from a practical point of view." The demarcation between the œsophagus and the cardia is so sharply defined by the transition from squamous to cylinder epithelium that there cannot be two opinions about it. The microscopical examination of the cardiac margin of the excised stomach, conducted by Professor Ribbert, showed incontrovertibly that in the present case the resection involved the œsophagus. And yet I must admit that after the operation was completed it was not quite intelligible to me on anatomical grounds how it was that I obtained comparatively easy access for suturing the œsophagus; in fact, I pulled it downwards with considerable force towards the stomach whereby the portion of it below the diaphragm was made materially longer. I discussed this subject with anatomists who explained that it was a well-known circumstance that the portion of the œsophagus below the diaphragm, which is normally about 3 centimetres (1¼ in.) in length, can be considerably increased by traction, and by some experiments on the dead body I was able to satisfy myself that the œsophagus is capable of being moved lengthwise in the foramen by which it traverses the diaphragm. After the removal of the Wölfler's clamps the œsophagus in our case was strongly retracted upwards. Perhaps also the weight of the gastric tumour had by its long-continued traction contributed to the lengthening of the sub-diaphragmatic portion of the œsophagus.

In selecting the patient's dietary I had principally to keep in mind the functions of which she had been deprived by the complete removal of her stomach. Of course it was some encouragement to me to feel that in the present case the extension of the cancer had already reduced the functions of the stomach to a minimum, if it had not in fact destroyed them altogether, and the patient's recovery provided an instance of an excellent compensation for the loss. But even though the stomach has henceforth and for ever lost the time-honoured halo of glory by which it was distinguished as being the chief organ of digestion according to modern physiology, its functions will always be of the utmost importance from a physical and chemical point of view, neither is there any prospect of its owner being quite able to do without it. To begin with, the stomach is of great importance as a reservoir for receiving the food. In the next place its mechanical action has the effect of thoroughly mixing its contents with the gastric juice, a secretion containing free hydrochloric acid and pepsin, the latter of which has the power of breaking up and dissolving a portion of the solid albumin of the food and of converting it into the so-called albumoses and peptones. The hydrochloric acid of the stomach is supposed to protect the intestine from bacterial infection and to exert a restraining action upon fermentation and putrefaction in the intestine. A certain amount of absorptive power is also attributed to the stomach.

I will now proceed to consider the conditions which resulted in consequence of each and all of these functions of the stomach being no longer in operation during and since the recovery of our patient. I naturally endeavoured to make up for the absence of the reservoir accommodation of the stomach by giving reduced quantities of food at shorter intervals than usual, so that as long as the patient took proper care she did not suffer from troubles due to this cause. Some few times it seemed to me that vomiting was caused by greatly overloading the digestive tract with a quantity of food amounting to or exceeding 300 c.c. (10½ fluid ounces) all at once. There was, however, another matter of more consequence—namely, that I did not at first sufficiently take account of the fact that the stomach, in addition to being a reservoir, adjusts the temperature of the food. As in the after-treatment of other laparotomies I allowed cold tea and milk to be given during the days immediately following the operation. The attacks of diarrhœa and the slight increases of temperature in the course of these days may with the greatest probability be ascribed to enteritis caused in that way. Bearing in mind the absence of the mechanical action of the stomach, dietary articles were selected which pass out of the stomach as easily and quickly as possible, irrespective of its state of functional activity. From this point of view fluid foods are obviously the best. In the first week we confined ourselves strictly to those in the form of milk, milk with brandy, soup (bouillon), soup with egg, and such like. In the second week the patient took without inconvenience minced meat, thick gruel ("breiige Mehlspeisen"), and 100 grammes (3½ fluid ounces) of Malaga in the course of the day. In the third week she was able to take sausage and fowl and at a later period even chops, roast veal, and baker's rolls quite well. If her powers of mastication had been better I would at the last have permitted her to have the full allowance for a patient, but unfortunately she possessed only one tooth and that was a decayed stump. She usually took her food at intervals of from two to three hours. The daily quantity consumed consisted on an average of about a litre (35 fluid ounces) of milk, two eggs, from 100 to 150 grammes (from 4 oz. to 6 oz.) of groats, 200 grammes (7 oz.) of meat, 200 grammes of gruel made with oatmeal or barley, one glass (? cup) of tea, and generally two rolls with 15 grammes (½ oz.) of butter.

I was especially apprehensive of the effect which the absence of the chemical functions of the stomach would produce on the patient's system. Fats and carbohydrates are but little affected by the gastric juice itself; they are dealt with almost exclusively by the intestinal digestion, but the case is the very reverse with the albumin and the albuminous bodies contained in the food, for it is the stomach that acts on them. At the outset I naturally hoped to make up in some degree for the absence of the gastric ferment by the administration of hydrochloric acid and pepsin as ordinarily prepared, not reflecting that in the intestine the hydrochloric acid would be immediately neutralised by the alkaline ferment of the pancreas and that pepsin in an alkaline solution is inert. I however discontinued this treatment very soon. In the course of the patient's recovery I was able to make the very gratifying observation that she obtained all the benefit of the albuminous constituents of her food, notwithstanding the absence of hydrochloric acid and pepsin. The analyses of the fæces and urine, which were made every day in the chemical laboratory of the Medical Klinik in Zürich by Dr. Wroblewski, showed a remarkably small quantity of nitrogen, thereby indicating a very abundant absorption of albumin; moreover, the assimilation of carbo-hydrates proved to be normal, as was to be expected. During the last few weeks the fat in the fæces was somewhat increased in amount, which could be easily accounted for by the richness of the patient's diet. Biliary acids were also recognised in the fæces. De Filippi in his investigations on metabolism in the dog after extirpation of the stomach refers[4] to a deficiency of biliary acids as the only abnormality in the fæces. This

[2] On Nov. 20th the patient was still in the Surgical Klinik for the purpose of further chemical and physiological investigations. She then felt quite well, was out of bed and at work all day long, took with few exceptions the ordinary diet of the patients, and has gained 500 grammes (about 18 oz.) in weight since she was shown at Olten, the total increase since the operation being therefore close on 5 kilos. (11 lb.).

[3] Deutsche Medicinische Wochenschrift, 1894, p. 969.

[4] Deutsche Medicinische Wochenschrift, 1894, p. 780.

fact had been already mentioned by Ogata, who ascribed the deficiency of biliary acids to the absence of hydrochloric acid, the consequence being that the taurocholic acid was not set free. In addition to these chemical analyses I have had the fæces examined microscopically, the troublesome task having been most kindly undertaken by Dr. Habel. His report, which was based on a series of continuous observations, was as follows: The fæces were always of a firm consistence and well moulded, pale yellow in colour, and homogeneous in texture. On microscopical examination there were found tolerably numerous fat globules, numerous acicular fatty crystals (a normal condition with a milk diet), and occasional undigested portions of vegetables, but no undigested muscle fibres or connective tissue fibres; there were also numerous crystals of triple phosphate. Bacteria were not abnormally numerous. Muscle fibres or connective tissue fibres were not found even when an experiment was made by giving the patient stringy boiled meat. The general result is that not the slightest deviation from the normal condition was revealed by the microscopical examination of the fæces. When I further recall to mind the fact in the patient's history that she has increased in weight by close on 5 kilos. (11 lb.) since the operation everyone will be convinced that there may be normal assimilation of the albuminous principles of the food notwithstanding the absence of the stomach without my presenting a full and precise table of the analytical determinations of the metabolic process.

It is the trypsin of the pancreatic ferment which possesses such a power of dissolving proteids as to render pepsin digestion entirely superfluous. This observation is quite in accordance with the results of the above-mentioned experiments on animals made by Kaiser, Pachon, Carvallo, and de Filippi, whose dogs showed no changes in their metabolism notwithstanding the absence of their stomachs. The experiment of Czerny and Kaiser, whose dog however retained the cardiac portion of its stomach, is quite conclusive, as are also the experiments of Ludwig and Ogata who were able to nourish dogs sufficiently well on fowl's eggs beaten up and minced meat, which were injected into a duodenal fistula without passing through the stomach. Ogata's explanation which his observations bear out is shortly this, that albuminous bodies, articles of food, and boiled connective tissue can be changed and prepared for absorption by the small intestine alone just in the same manner as by the combined operation of the stomach and the small intestine. If, however, the connective tissue introduced into the pylorus was not boiled but raw it was voided by the rectum in from six to eight hours after ingestion; the gelatin-producing fibres retained their shape perfectly and could be dissolved to a jelly by boiling.[5] The result was always the same whether the connective tissue was administered alone or mixed with eggs and muscle fibres. Accordingly in fæces derived from meat there was always found an abundant confused mass of fine fibres such as ordinarily occur among the muscular bundles.

In recent literature there are also recorded a few cases of jejunostomy in the human subject in which uniformity in the assimilation and excretion of nitrogen could be maintained for a considerable time. Friedländer[6] injected both soluble and insoluble forms of albumen directly into a loop of the small intestine of dogs, killed the animals after four hours, and examined the contents of the loop of intestine. The greater part of the egg albumen and the serum albumin was already absorbed as well as that of the alkali-albuminate and the albumoses.

The possibility of doing without the function of digestion as it is conducted in the stomach is also evident from many clinical observations. For instance, Ewald and Einhorn showed before the Hufeland Society cases in which complete and long-continued non-secretion of gastric juice was demonstrated. Von Noorden[7] has shown by investigations of the phenomena of nutrition that patients in whom the power of secreting hydrochloric acid in the stomach was completely in abeyance and in whom there was consequently no pepsin digestion were nevertheless enabled to derive full benefit from their food just as if their stomachs had been in the ordinary condition. No more than a normal proportion of the considerable quantities of albumin and fat which they took was lost in the fæces.

Moritz[8] has made an extremely instructive investigation of the phenomena of nutrition in the case of a patient who in addition to loss of the faculty of gastric digestion, due to absolute non-secretion of hydrochloric acid and pepsin, suffered from the embarrassing complication of chronic intestinal catarrh, the result being that the food which was taken was hurried through the entire digestive tract in an average period of five hours. The patient, however, was well sustained by the fat and carbohydrates of his food and there was also a considerable amount of albumin absorbed, although some of it was lost.

Moritz endeavoured to elucidate the conditions of normal gastric digestion in the dog by means of a duodenal fistula which was situated close to the stomach and through which the contents of the stomach as they escaped from the pylorus were intercepted and further examined. By these investigations it was found that with a great proportion of the food the only effect of the chemical action of the stomach was to convert it into a slippery pultaceous mass which was then sent through the pylorus. When the dog was fed on minced raw meat 58 per cent. of the quantity was discharged into the intestine in an undissolved condition. The pylorus even allowed small pieces of sausage to pass through, although they were retained for a considerable time. Moreover, the absence of the milk-curdling ferment does not create any notable derangements. It is not necessary to suppose that it is replaced by an acid fermentation for the intestinal canal possesses a milk-curdling ferment of its own. Roberts, Harris, and Gow have drawn attention to the fact that all the pancreatic extracts coagulate milk and the mucous membrane of the small intestine seems to secrete a ferment of this kind throughout its whole extent.[9]

Our patient supplies a valuable contribution to the solution of the question whether the hydrochloric acid of the stomach has or has not an influence on the process of putrefaction in the intestine. Her urine and fæces were examined for putrefaction products regularly every day and I always received from the chemical laboratory the report that skatoxyl and indoxyl were either altogether absent from the urine or were present only in traces. It was only on three consecutive days that the analyses showed the proportion of indoxyl and skatoxyl to be increased. The proportion of indol and skatol in the fæces was not abnormal. This result agrees perfectly with that obtained by von Noorden in his researches. He made forty-six separate determinations in the case of eleven patients who had almost completely lost the faculty of secreting hydrochloric acid and he was so far from confirming the researches of Kast and Wasbutzkis that he met with only five instances in which the products of decomposition of albumin derived from the intestine and appearing in the urine as ethereal sulphates were greater in amount than might have been expected with patients whose stomachs were healthy. Our patient, as the outcome of numerous experiments prolonged for many weeks, supports the conclusion of von Noorden (in opposition to recent researches in Baumann's laboratory), that deficiency of hydrochloric acid in the stomach exercises no influence on the progress of the natural putrefactive processes in the intestine.

The antiseptic action of the gastric juice upon various pathogenic organisms, although proved by a series of beautiful researches, must not be over-estimated. Falk and Frank found that the gastric juice destroyed anthrax bacilli but not the spores which the bacilli contain. The tubercle bacillus, however, was not destroyed by the gastric juice. Like Falk, Frank also comes to the conclusion that the digestive juices do not oppose any general or active resistance to the attacks of pathogenic organisms. Quite recent inquiries also lead us to suppose that the absorptive activity of the stomach is much less than we have hitherto been accustomed to believe. In experiments made on dogs in which duodenal fistulæ were established von Mering[10] and Moritz[11] were able to prove that the whole of the water which was given to the animals to drink left the stomach again by way of the pylorus in a relatively short time—generally within from twenty to thirty minutes—without its amount being reduced by absorption into the stomach; on the contrary, in many experiments a few extra cubic centimetres were collected if the stomach happened to be secreting fluid. In one of Moritz's experiments of

[5] Archiv für Anatomie und Physiologie (Physiologische Abtheilung), 1883, pp. 98-104.
[6] Zeitschrift für Biologie, Bd. xxxiii., N.F., Bd. xv.
[7] Von Noorden: Lehrbuch der Pathologie des Stoffwechsels, 1893, and Zeitschrift für Klinische Medicin, vol. xvii.
[8] Münchener Medicinische Wochenschrift, 1895, No. 49.
[9] Gamgee, p. 403.
[10] Verhandlungen des Congresses für innere Medicin, Twelfth Congress, 1893, p. 473.
[11] Loc. cit., p. 1144.

feeding with meat only 5 per cent. of what was taken was absorbed by the stomach during the period of seven hours for which the experiment was continued. In an experiment with milk 11·6 grammes of mixed casein and albumin were swallowed and as much as 13·5 grammes were discharged from the pylorus, the surplus being accounted for by the fact that the secretion of the mucous membrane contained mucin and was mixed with the contents of the stomach. A high rate of absorption was found for only one substance—viz., for alcohol. Von Mering's[12] experiments prove that an abundant flow of water into the stomach takes place simultaneously with the absorption of alcohol. The more concentrated the ingested alcohol is the more of it is absorbed in the stomach, and the larger the quantity of water which exudes into the stomach. Sappeiner, Legall, and Brandl[13] observed that the absorption of other substances was promoted by the addition of alcohol. Sugar[14] was also absorbed in moderate quantity, peptone and dextrin to a small extent. It is therefore proved that the absorption of the principal articles of food in the stomach, alcohol excepted, is quite insignificant.

In addition to these points of a specific functional nature the case is of interest in a good many other respects. For one thing the question presents itself—Is there after removal of the stomach a change in the rate at which food passes through the intestine? Richet observed in a case of gastric fistula that in the human subject the quantity of food in the stomach did not change materially during the first three hours but that after that almost everything was expelled in the course of a quarter of an hour. Kühne has made similar observations both on patients and on dogs. According to other investigators the emptying of the stomach in the human subject takes place only by degrees. Beaumont, in his numerous observations upon St. Martin, the Canadian hunter, found that in general the stomach was empty in from one and a half to five and a half hours after meal times according to the varying nature of the food. Obviously the time of passage through the entire digestive tract ought to be proportionately shortened in a person whose stomach has been removed. The residual fragments of the food which our patient had eaten were so very scanty that I could draw no conclusions from her defæcations, which took place at the most once a day and often only every second day. As she was unwilling to take wood charcoal I had recourse provisionally to an experiment with whortleberries. Boiled whortleberries passed in the fæces three times twenty-four hours after they were eaten. The daily analyses of the urine did not show any mentionable deviations from the healthy condition; the only striking feature was a persistent diminution in the amount of chlorine excreted, recurring in every daily chart. The proportion of chlorine, or rather of sodium chloride, fluctuated for the most part between 0·6 and 0·8 per cent., the smallest amount being 0·53 per cent., and the greatest 0·95 per cent. As however the quantity of salt contained in the food has a preponderating influence on the proportion of sodium chloride in the urine, and as our patient's diet was remarkably poor in salt as compared with ordinary fare, I do not venture to draw further conclusions from these observations.

The patient's clinical history makes mention of four attacks of vomiting, an exceedingly peculiar symptom in one who did not possess a stomach, and very disconcerting to those who are inclined to ascribe to the anti-peristaltic movements of the stomach wall an essential part in the act of vomiting. For some time after the operation the patient had only regurgitation of food now and then; the first typical attack of vomiting occurred in the third week, when nearly 300 c.c. (10½ fluid ounces) of food in a pulpy condition were vomited by mouthfuls about an hour after a somewhat hearty meal. On another occasion the vomiting was attributable to a feeling of revulsion which she experienced in consequence of the dressings of the patient in an adjoining bed being changed. On chemical examination 100 c.c. of the filtered vomit, which was acid, were neutralised by 3·4 c.c. of decinormal caustic soda solution. It contained lactic acid, bile acids, and bile pigment, but no free hydrochloric acid. The vomit showed evidence of the action of the ferment trypsin. The conducting tube of the small intestine, which was perhaps by this time somewhat dilated, must be considered as the main reservoir containing the quantity of about 300 c.c. (10½ fluid ounces) which was vomited.

How was the act of vomiting accomplished in this patient? Magendie[15] energetically upheld the opinion that the stomach plays an entirely passive part in the act of vomiting, and that its contents are expelled by the combined action of the contractions of the diaphragm and the abdominal muscles. He believed that he had proved this by the well-known experiment in which he excised the stomach and replaced it by a pig's bladder filled with water and united to the lower part of the œsophagus by a flexible coupling. When an emetic was introduced by a vein into the circulation of an animal prepared in this way the contents of the bladder were transferred to the creature's mouth by a normal act of vomiting. Santini made the important discovery that the experiment just described succeeds only when the stomach is removed *together with the cardia*, and he subsequently devised an arrangement for preventing the food coming up. There is no difficulty in explaining the starting-point of vomiting even in a person who has no stomach. Vomiting is a complicated operation associated with quite a number of phenomena of movement in the stomach, the œsophagus, the pharynx, the diaphragm, and the abdominal muscles. Such complicated movements can only be set a-going by the nervous centres. The centre for vomiting is acted upon reflexly not only by the stomach but by various other organs especially by those of digestion and by the pharynx, the œsophagus, and the intestine. In one of the attacks of vomiting already mentioned the reflex influence was purely mental, the exciting cause being an accidental feeling of revulsion; in the other cases it originated from the lower part of the œsophagus or from the small intestine and was perhaps due to the mechanical irritation of these parts by too liberal a supply of food.

The etiology of gastric tetanus is a subject of great interest both physiologically and clinically and may obviously be discussed in connexion with this patient's case. This condition was first described by Kussmaul, and subsequently by Gerhardt, Müller, and others; von Mering[16] also observed the same combination of symptoms in dogs in which duodenal fistulæ were established. Milk was liberally supplied to the small intestine and was well absorbed by it, but in from three to eight days after the operation convulsive movements of the limbs and the facial muscles supervened, the animals' limbs became stiff so that they did not walk freely, they groaned, ground their teeth, showed sometimes palsy of a limb and as a regular thing a greatly increased reflex irritability; drowsiness with sighing respiration succeeded and they soon died. The cause of this gastric tetanus was supposed by von Mering to be the absence of the secretion of the mouth or the absence of a substance secreted by the stomach (hydrochloric acid, mucin, &c.). In our case the absence of the entire gastric secretion has not up to the present time produced even one of these symptoms in the faintest degree. It must be admitted, however, that this is not an absolute disproof of the gastric origin of the disease, for as was remarked by von Mering, it is conceivable that the formation of the substance in question is of no consequence for the maintenance of life but that, on the other hand, life is endangered when the substance which would be formed under normal conditions is no longer returned to the circulation.

There still remain a number of interesting questions, principally of a chemico-physiological nature, some elucidation of which we hope to obtain through the medium of our patient; the time of observation has, however, been too short to justify me in entering on them at present. In fact, what precedes is to be accepted as a provisional communication, further observation and research being necessary before definite opinions can be arrived at.

The scientifically and practically important question whether the total removal of the stomach in the human subject is compatible with a continuance of life has with great probability been answered in the affirmative by the case which has now been briefly narrated. The stomach is essentially an organ for the protection of the intestine, mitigating or removing such properties of the food as might have an injurious influence on the intestine. Provided that the food is of suitable quality the intestine is quite competent to perform the chemical work of the stomach.

Postscript by Dr. Schlatter of date Jan. 10th, 1898.—The patient still remains in the Zürich Surgical Clinic for the purpose of further chemical and physiological investigations.

[12] Loc. cit., p. 477.
[13] Moritz: loc. cit., p. 1144.
[14] Hammarsten: Lehrbuch der Physiologischen Chemie, 1891, p. 158.
[15] Hermann: Handbuch der Physiologie, 1883, vol. v., part 2, p. 435.
[16] Loc. cit., p. 474.

She feels perfectly well and is out of bed all day long, busily engaged in various employments. She takes with few exceptions the ordinary patients' dietary, consisting of farinaceous food (Mehlspeisen), meat, fruit, and vegetables such as beans, peas, &c.; milk diet, however, is considered to be the most wholesome for her. Her weight was found on Dec. 3rd and Dec. 17th, 1897, to be 37·5 kilos. (82½ lb.), so that she has gained in weight about 6 kilos. (13¼ lb.) since the operation. On Dec. 23rd she was seized with severe angina (i.e., tonsillitis or sore-throat) and had an evening temperature of 39·8° C. (103·6° F.). This illness had the effect of bringing down her weight to 37 kilos. (81½ lb.) on Dec. 31st, 1897.

Zurich.

THE ACTION OF VERATRUM VIRIDE IN A CASE OF PUERPERAL ECLAMPSIA.[1]

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THE patient was a married woman, aged forty years, a multipara, whose previous confinements had been attended with no difficulty. The patient was seen on July 5th, being then in the ninth month of pregnancy. The first indication of anything abnormal in her labour took place on the evening preceding the day on which the child was born. She had suffered for years from what she defined as bilious headaches attended with severe sickness and occasionally fainting. What seemed to be one of her ordinary headaches was being undergone when about 6 P.M. her mother thought the patient had something like a fit. It lasted, however, only a few minutes. I was sent for at nine o'clock the same evening and found her complaining of severe headache which she alleged to be of her usual type. Her pulse was 120 and hard, the respirations were 22 per minute, the pupils were contracted, the tongue was furred, there was an offensive odour with the breath, and the legs and feet were swollen. I waited for one and a half hours because, in spite of her own idea that she had had no fit although she might have fainted, I suspected the possibility of puerperal eclampsia.

I was not sent for again till 5.30 next morning and was then told that she had had several attacks—at 1.30 A.M., at 4 A.M., and again at 5.30 A.M., after which she had lost consciousness. Only then the friends sent for me. When I arrived she was just passing into another fit which was severe, lasting for about five minutes. After the fit she was quite unconscious; there was a firm, strong pulse of 100, the respirations were 28, the pupils were contracted, the corneal reflex and other evidence of sensation being abolished, and the face was livid and puffy. I resolved at once to try veratrum viride, which had yielded such good results in the hands of Professor Stephenson some time previously. My efforts to obtain it from the druggists were, however, fruitless. I then took the liberty of asking Professor Stephenson for a supply, which he kindly consented to give and at the same time volunteered to come and see the case. From the time of my arrival till the coming of Professor Stephenson four other convulsive seizures took place, increasing in violence. Meantime vaginal examination revealed a rigid os of about the size of a shilling. Uterine contractions took place at irregular intervals between the fits. Immediately on the arrival of Professor Stephenson, at 8.15 A.M., a 5 minim hypodermic injection of the fluid extract of veratrum viride was given in the forearm. At this time the pulse varied in rate from 92 to 100 per minute and was hard, firm, and bounding. The temperature taken immediately after a fit was 100° F. The skin was moist and sensation was still absent. At 8.30 A.M. the pulse was 84, softer in character, with less of the firm, bounding nature and slightly unequal in the value of its beats. The skin was more moist. The patient moaned a good deal; stimulation of the reflexes gave no result. At 8.35 A.M. the pulse was 72, and at 8.40 A.M. it had slowed to 54. The reflex of the cornea was now apparent and the patient raised her hand to ward off my finger from the eye. At this time she made efforts at vomiting and the skin became covered with moisture. At 8.50 A.M. the pulse was still 54, soft and compressible and vomiting took place, which was bilious in appearance. At 9.5 A.M the pulse was 52 and very soft in character. A considerable quantity of bile-stained mucus was coughed up and there were frequent attempts at vomiting. Uterine pains proceeded; the external os had dilated to 1½ inches; the internal os had the head engaged; and the external parts were moist and natural. At 9.10 A.M. the right eyeball was rolled downwards and inwards, the left also, but not so much as the right. The pulse now varied from 58 to 60, and more evidence of consciousness was given in response to the touch. A large quantity of bilious-looking material was vomited and the skin was very moist. At 9.15 A.M. the pulse was 52 and the temperature was 99·5°. At this time Professor Stephenson began to deliver the child. At 9.43 A.M. the pulse was 60 while the foot was being brought down. At 9.55 A.M the child was born; at 10.5 A.M. the placenta came away; there was no hæmorrhage and the uterus contracted well. At 10.15 A.M. the pulse was from 54 to 60. the temperature was 100·4°, and the respirations were 28. At 11.10 A.M. the plantar reflex was present, the pulse was 60 per minute and soft, the temperature was 99·8°, and the respirations were 24; there was less moaning with the breathing and an appearance of downward pressure with respiration; strabismus of the right eye and the corneal reflex were present, the colour of the face and lips becoming more natural. At 4.15 P.M. in the afternoon Professor Stephenson called and made the following note. "The patient had rested quietly since one o'clock; the breathing and colour were good; she resented the opening of the eyelids; took four teaspoonfuls of brandy-and-water, responded to spoon, and swallowed naturally; resisted abdominal examination; there was slight moaning as if half conscious; the pulse was 56." I called at 9.15 and found the patient sleeping, breathing deeply and quietly; she resented any attempt to open the eyelids and said, peevishly, "Be quiet." The pulse was 60 and fuller and firmer than in the morning, the respirations were 16, the temperature was normal, and the lochia were about normal in quantity. The patient's colour was good. No vomiting or coughing of froth had taken place since 1 P.M. She became conscious about 10 P.M., asked a few questions, and then got mixed in her ideas. She soon fell asleep, however, and slept nearly all night. I found her awake at 10.30 next morning and able to do what she was asked. The tongue was dirty and swollen and the breath had an offensive odour. The pulse was 80, firm, strong, and steady; the respirations were 20; the temperature in the mouth was 99·2°; the right eyeball rotated inwards and downwards; and she complained of headache and pain all over the body. The quantity of urine passed during the night was 20 oz. At 5.50 P.M. the pulse was 80 and the patient was sleeping. On the 8th—that is, the second day after the birth—the pulse was 80 and the respirations were 20; the temperature was normal; the eyes were strabismic and she complained of headache; the strabismus disappeared on the succeeding day. From this time onward the patient progressed steadily towards complete recovery. I may state that after the disappearance of the lochia examination of the urine showed a considerable quantity of albumin to be present. The patient has still traces of albumin in the urine as a recent examination shows.

It may be useful to give a short description of veratrum viride as the drug is not specially well known. The dry rhizome and rootlets are the parts used. It is an American plant and inhabits swamps, moist meadows, and the banks of mountain streams. It is most abundant northward but reaches as far south as the Carolinas. It flowers from May to July and it is a moot point whether the rhizome should be collected in autumn or just before flowering time. It ought not to be used if it has been kept longer than a year as it deteriorates. The rhizome is from an inch to two inches in length by three-quarters of an inch in breadth, of a chocolate-brown colour externally, and is closely invested with numerous yellow, wrinkled rootlets an inch or two inches long. The rhizome has a bitter, acrid taste, is inodorous, but produces sneezing when snuffed in powder form. The United States officinal preparations made from it are the liquid extract and the tincture. The dose of the liquid extract is from one to three minims and of the tincture from three to six minims. Its chemical composition, given by Bullock, who first discovered the alkaloids, was veratrine and veratroidine, both of them alkaloids, and a resin. It is somewhat more

[1] A paper read at a meeting of the Aberdeen Medico-Chirurgical Society on Dec. 2nd, 1897.

complex, however, as may be seen from the result of the researches of Wright and Luff. In veratrum viride they found jervine, pseudo-jervine, cevadine, a little rubi-jervine which is the same as Bullock's veratroidine, and traces of veratrine and veratralbine.

I may summarise the medical uses and properties of the drug. It reduces the force without at first lessening the frequency of the pulse, but after a time the pulse-rate falls very much. If exertion be made during this stage of depression the slow pulse will be suddenly converted into an exceedingly rapid one. The slow pulse is sometimes moderately full, but is always soft and compressible. The rapid pulse is exceedingly feeble and small and may become imperceptible. Severe nausea and vomiting accompany or follow the reduction of the pulse-rate. During the stage of depression there are always decided muscular weakness and relaxation. Veratrum viride is looked upon as a powerful spinal and arterial depressant exerting little or no direct influence upon the cerebral centres. Its alkaloid jervine lowers the pulse rate by its direct action on muscle and its alkaloid rubi-jervine or veratroidine lowers it by stimulating the inhibitory nerves. Its jervine diminishes the force of the heart beat by a direct influence upon the cardiac muscle, and by producing a general vaso-motor paralysis more or less complete according to the size of the dose. By the action especially of the jervine the spinal motor nerves are directly depressed. Neither the sensory centres nor the motor and sensory nerves are distinctly affected. Veratrum viride is used in practical medicine, therefore, to reduce arterial excitement and to quiet spinal spasms.

Remarks.—The case is interesting as one of puerperal eclampsia treated solely by the action of veratrum viride, and therefore one is presumably free to deduce that the improvement which followed was due to the action of the drug. The outstanding features in the action are the lowering of arterial tension, the slowing of the pulse-rate, and the absence of convulsive seizures after the dose of the drug was given. Within fifteen minutes of administering the dose there was a perceptible change in the character of the pulse. It had been firm, hard, and bounding, but now became softer, was full and easily compressible. The number of the beats was also reduced from 92 or 100 to 84 and there was slight inequality in the value of the beats. Five minutes later the pulse-rate was reduced to 72; in another five minutes the pulse had become 54 and fifteen minutes later still it had reached its minimum of 52. Afterwards for two hours the pulse-rate was taken at intervals of fifteen minutes and kept varying from 54 to 60 per minute. When taken five hours later it was still 56 and five hours later again it was 60.

Although the reduction in the rate of the pulse is a striking feature it must be remembered that in this case the pulse-rate was never very high, 120 being the maximum—at any rate, after the case was seen by me. The most significant feature, however, was the action of the drug on the arterial tension evinced by changing the firm, bounding, resisting character of the pulse to one of a soft, full, and compressible nature. And this condition of pulse continued fairly well marked for ten hours after the injection of the drug. The influence of the drug in relaxing muscular tissue was shown by the speedy dilatation of the rigid external os. The most objectionable feature in the exhibition of the drug was the retching and vomiting. There was also a considerable amount of salivation which gave trouble by producing cough. The skin of the patient kept moist.

So far the etiology of puerperal convulsions is obscure. The frequent albuminuria with which it occurs gave rise to the opinion that it was the result of uræmia, and although cases occur where there is no albumin present, and other patients with an abundance of albumin escape, it is thought that renal insufficiency is the most frequent if not invariable cause. Traube and Rosenstein refer its causation to acute cerebral anæmia resulting from changes in the blood incidental to pregnancy, the watery condition of the blood being associated with increased arterial tension. Dr. Angus Macdonald, of Edinburgh, found from post-mortem examinations extensive anæmia of the cerebro-spinal centres with congestion of the meninges without œdema. He attributed the convulsive attacks to irritation of the vaso-motor centres from an anæmic condition of the blood produced by the retention in it of excrementitious matters that ought to have been thrown out by the kidneys.

Applying now the recognised physiological actions of veratrum viride we know that one of its alkaloids, jervine, is able to reduce the force of the heart-beat by its direct influence on the cardiac muscle and that it is capable also of producing a general vaso-motor paralysis; that it likewise reduces the pulse-rate by a direct action on muscle, while the other alkaloid veratroidine by stimulating the inhibitory nerves also reduces the pulse-rate; and both alkaloids—namely, the jervine and the veratroidine—are, in addition, depressants to the motor centres in the spinal cord. We have therefore in veratrum viride an agent the physiological properties of which meet the supposed pathological conditions in puerperal eclampsia—namely, increased arterial tension and cerebro-spinal excitement.

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Aberdeen.

THE PATHOLOGY AND TREATMENT OF GOUT.[1]

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SINCE the discovery of a compound of uric acid in gouty concretions by Wollaston in 1797 and the subsequent discovery fifty years ago by Sir A. Garrod of uric acid in the blood of gouty patients the relationship of uric acid to gout, either as a cause or a result, has been universally conceded. Observers and writers on gout have, however, been divided into three schools, accordingly as they held the view—(*a*) that the uric acid compound only exerted a baneful effect after it had crystallised from the blood and had become deposited in the affected tissues, or (*b*) that while dissolved in the blood it exerted a true toxic influence, or (*c*) that the uric acid was merely a by-product in the gouty process—that is, a result of certain changes in the system which by themselves constituted the disease of gout.

The view which regards gout as a disease which is the result of a true toxic action exerted by the uric acid compound dissolved in the blood is untenable for these reasons: (1) there is no experimental proof that uric acid is a poison; (2) a gouty subject just prior to the advent of an attack of acute gout shows no signs of poisoning although the fluids of his body are saturated with a compound of uric acid; and (3) in cases of leucocythæmia and severe anæmia the blood is frequently highly charged with uric acid without the production of any toxic symptoms that could be referred to that body. Again, the various views as to the uric acid being merely a by-product in the gouty process fail to explain many of the phenomena of gout, a subject which I fully discussed last year in the Goulstonian Lectures on the Chemistry and Pathology of Gout.[2] The remaining view, then, that the compound of uric acid only exerts a baneful effect after precipitation from the blood and deposition in the tissues is, in my opinion, the most tenable one and is the view held by such eminent authorities as Sir A. Garrod and Sir W. Roberts. This view regards the soluble uric acid compound as being destitute of poisonous qualities and as producing no harmful results so long as it remains dissolved in the fluids of the body. When, however, the fluids become over-saturated with this compound a crystalline deposition of sodium biurate occurs which then acts as a mechanical irritant to the tissues and structures in which the deposition takes place.

As all observers are agreed that an abnormal quantity of uric acid is present in the blood in gout, such overcharging of the blood with uric acid must be due to one or more of the following causes: (1) production of the uric acid in the normal manner but insufficient excretion of it; (2) over-production of uric acid while the excretion remains about normal; and (3) diminished destruction of uric acid by imperfect oxidation or by some other means. This last theory may be dismissed at once. There is no proof that the process of oxidation or any other process going on within the organism destroys uric acid; on the contrary, there is proof that uric acid is produced by a process of

[1] A paper read before the Harveian Society of London on Jan. 6th, 1898.

[2] THE LANCET, March 27th and April 3rd and 17th, 1897.

oxidation. The second theory that there is an over-production of uric acid in the system while its excretion remains normal is untenable, since it is based on the assumption that the kidneys can only eliminate a certain amount of uric acid, whereas there is abundant experimental proof that an increased production of uric acid such as occurs throughout the system in cases of leucocythæmia and severe anæmia does not lead to gout so long as the kidneys remain in a normal condition. In these diseases the blood may be laden with uric acid and the daily excretion of that body may rise to six times the usual amount, yet such a quantity is readily excreted by the kidneys and no development of gout occurs. We are therefore restricted to the first-mentioned views as to the cause of the presence of the uric acid in the blood in gout—viz., that it is due to its being produced at the normal seat or seats of its manufacture, but that it is deficiently excreted. That there is a deficient excretion of uric acid in gout is, I think, proved by the recent accurate estimations of the elimination of uric acid in gouty subjects made by Pfeiffer[3] and more recently by myself.[4]

The question next arises whether the uric acid, which in gout is imperfectly excreted, is manufactured in the organs and tissues of the body generally and thence passed into the general circulation, or whether it is produced only in the kidneys, and then, in consequence of imperfect excretion by these organs, the residual quantity of uric acid is absorbed from them into the general circulation. Now if uric acid be produced in the liver or spleen or tissues generally then it follows that it must be conveyed in the blood to the kidneys in order to be excreted, and if such be the case its detection in the blood, if careful search for it be instituted, should be an easy matter. The blood of several healthy individuals has comparatively recently been carefully examined for uric acid by von Jaksch,[5] by Klemperer,[6] and by myself,[7] with negative results in all cases. Sir A. Garrod examined the blood of the ox, sheep, pig, and various birds by the uric acid thread test, but never found a trace of uric acid present, although in all these varieties of blood he always found urea. I have myself examined large quantities of the blood of mammals and birds for uric acid by a new process,[8] but always with a negative result. On the other hand I always found urea present in all the varieties of blood. This mass of evidence shows that uric acid is never present in the healthy blood of mammals and birds, although the urinary excretion of the latter is almost entirely composed of a compound of uric acid. Such facts inevitably force us to the conclusion that uric acid is normally produced in the kidneys only.

I therefore consider that the first step in the pathogenesis of gout is a failure on the part of the kidneys—from functional or organic mischief—to perfectly excrete the uric acid formed in them and that consequently absorption of the non-excreted portion takes place from them into the general circulation, where it circulates throughout the system at first in the form of sodium quadriurate, and so forms the source from which the gouty deposit is derived. This view is supported by the following facts: (1) in all cases of kidney disease (not associated with gout) in which the blood has been examined for uric acid that body has been found present, showing that when the excretory function of the kidneys is interfered with absorption of uric acid into the general circulation occurs: (2) uratic deposits in the joints are frequently found at the post-mortem examinations of subjects of kidney disease who have never been known to suffer from ostensible gout during life; and (3) kidney mischief is frequently met with at the post-mortem examinations of gouty subjects.

As to the actual formation of uric acid in the kidneys I believe that it is formed in those organs by the combination of urea with glycocine or with one of the derivatives of the latter body. This explains why disorders of the liver constitute so important a factor in the gouty process, since in that organ the antecedents of uric acid are either manufactured or elaborated. The uric acid which is formed in the kidneys is at once converted into the quadriurates of ammonium, sodium, and potassium, which, if excreted, constitute the amorphous urates of the urine. If, however, any absorption of them takes place into the blood they are entirely converted into the sodium quadriurate, which at first constitutes the sole uric acid compound circulating in the blood. This compound is, however, unstable and after a variable period of time it unites with some of the sodium carbonate of the blood to form sodium biurate. This sodium biurate is much less soluble in the blood than the quadriurate and it therefore, when the blood becomes oversaturated with it, deposits in these tissues which, either on account of having received previous slight injuries or because of their poor vascular supply, specially favour its deposition. Such tissues are structures belonging to the connective-tissue class—cartilages, ligaments, tendons, and the cutaneous and subcutaneous connective-tissues. Although the view has been held for some time past by various writers on gout that uratic deposition is dependent upon a diminution of the alkalinity of the blood, yet I hold the very strong opinion that such deposition is not in any way affected by variations in the alkalinity of that medium. The view that uratic deposition is caused by diminished alkalinity of the blood while increased alkalinity of the blood causes a re-solution of the deposit is, in my opinion, absolutely erroneous and untenable. My reasons for holding this opinion are, briefly stated, as follows: (1) recent researches show that the alkalinity of the blood of gout is very little if at all diminished and that corresponding variations in the alkalinity are frequently met with in healthy individuals; (2) both these views are based on the erroneous supposition that the deposit is uric acid, whereas it is sodium biurate, the solubility of which is not increased by increased alkalinity of the blood; and (3) by a series of experiments described in the Goulstonian Lectures[9] for 1897 I showed that a diminution in the alkalinity of blood-serum does not hasten or facilitate the deposition of sodium biurate from that medium and does not affect the solvent power of the medium for the biurate. I also consider that the assumption that the gouty properties of certain wines and beers are due to the acid contained in them is erroneous. The acidity of such beverages is mainly due to organic acids, which I have shown to be incapable of facilitating the deposition of sodium biurate. I think it is probable that the gout-inducing properties of such wines and beers are due to the effect they exercise on the metabolism of the liver by increasing the amount of glycocine passed to the kidneys and so causing an increased production of uric acid in those organs. From the results of a series of experiments, which are not yet completed, I incline to the view that the ethereal compounds contained in wines and beers are mainly responsible for the altered metabolism produced in the liver by these beverages. Certainly the effect is not due either to the alcohol or to the sugar contained in them.

THE TREATMENT OF GOUT.

In the first place it should be borne in mind that no routine treatment can be adopted which is suitable to all cases. The nutritional condition of the patient, his habits, surroundings, and mode of life constitute factors that must necessarily modify the treatment of individual cases. The treatment of gout should have for its aims the following objects: (1) the treatment of the gouty paroxysm in cases of acute gout and the relief of the pain as speedily as possible; (2) the treatment of the subacute or chronic condition and the prevention of the recurrence of an attack, which may be effected by the promotion of the elimination of uric acid, by checking any excessive formation of uric acid that occurs in some subjects, and by careful attention to diet and general hygiene; and (3) treatment of the affected joint or joints, with the object of removing the uratic deposit and of preventing permanent deformity. It is useful before commencing treatment, and from time to time during treatment, to know the amount of uric acid that is being daily eliminated in proportion to the body-weight of the patient. This determination of the amount of uric acid eliminated must be made on a sample of the mixed urines of twenty-four hours. The process that I always employ for such determinations is the Gowland-Hopkins process which is a very accurate method for the estimation of uric acid in urine.

TREATMENT OF THE GOUTY PAROXYSM.

The limb should be placed in the horizontal position, or slightly elevated above the level of the body and a cradle

[3] Berliner Klinische Wochenschrift, 1892, p. 413.
[4] THE LANCET, March 27th, 1897, p. 860.
[5] Deutsche Medicinische Wochenschrift, 1890, Band xxxiii., p. 741.
[6] Ibid., 1895, Band xxi., p. 655.
[7] THE LANCET, March 27th, 1897, p. 863.
[8] THE LANCET, March 27th, 1897, p. 861.

arranged to take the weight of the bedclothes off the affected part. To alleviate the severe pain felt in the affected joint warm packs should be arranged round it consisting of cotton-wool saturated with a soothing lotion and then lightly covered with oil-silk. I have found the following lotion most useful in relieving the local pain: three drachms of carbonate of sodium, two ounces of liniment of belladonna, one ounce of tincture of opium, with water to eight ounces. A small portion of the lotion should be mixed with an equal quantity of hot water and poured on cotton-wool previously arranged round the joint. For the internal treatment of acute gout colchicum is one of the most valuable drugs that we possess. It should be especially used for acute gout and for subacute attacks supervening on chronic gout. If used continuously tolerance is apt to be acquired and then the drug ceases to act. At the commencement a large dose of from thirty to forty minims of colchicum wine should be given, followed by a mixture containing from ten to twenty minims of the wine with from forty to sixty grains of citrate of potassium, which should be administered three times a day. Colchicum reduces the gouty inflammation, relieves the pain, and shortens the attack. From four to five grains of blue pill should be given the first night, followed by a dose of Epsom salts in the morning. In my opinion it is advisable in the treatment of gouty patients to avoid the use of saline purgatives owing their efficacy to salts of sodium on account of the undoubted power possessed by all sodium salts of diminishing the solubility of sodium biurate. For the first day or two of an attack of acute gout the patient should be restricted to a milk diet.

TREATMENT OF SUB-ACUTE OR CHRONIC GOUT.

Promotion of the elimination of uric acid.—This may be effected by medicinal treatment, and by diet and regimen. Citrate of potassium is employed as a diuretic which increases the volume of the urine and at the same time diminishes its acidity. The use of the citrate of potassium may with advantage be pushed until moderate alkalinity of the urine is produced, as by such means the quadriurates are rendered more soluble and more stable than they are in an acid urine and so the tendency to the deposition of uric acid or sodium biurate in the kidney tissues is removed. Free diuresis should also be encouraged by the drinking of sufficient quantities of water. A patient suffering from gout should avoid the use of common salt at table owing to the power it possesses of diminishing the solubility of sodium biurate and thereby both augmenting the precipitation of that body and also interfering with its removal from the system. On account of the results that I have obtained with the mineral constituents of vegetables, to which I shall briefly refer later, I am inclined to suggest that a table salt composed of the ashes of certain of the vegetables should be freely used by gouty subjects in place of common salt.

Means of checking the excessive formation of uric acid—These consist in careful attention to diet and regimen, in the promotion of the metabolism of the liver, so as to check the excessive production of the antecedents of uric acid, and in the relief of congestion of the portal system, which can be effected by keeping the bowels open at least once a day. In addition to colchicum, which acts as a stimulant of hepatic metabolism, guaiacum may very usefully be administered as an alterative which stimulates the metabolism of the liver and also affords relief to the portal system. From five to ten grains of guaiacum resin should be given in cachets two or three times a day, according to the effect on the bowels, since guaiacum generally acts as a laxative. If constipation occurs a sulphur and guaiacum tablet or a dose of compound liquorice powder should be taken at night. An occasional dose of blue pill followed by a purge of Epsom salts will be found useful.

Diet and general hygiene.—A rational mixed diet is the one best suited for gouty patients, care being taken to avoid excess. The assumption that a purely vegetable diet is best for the gouty is erroneous, since the production of uric acid depends on the ingestion of proteid matter, and it makes no difference whether the proteid matter be of animal or vegetable origin. At the same time it must be borne in mind that since animal food is so much richer in proteids than a vegetable diet the amount of the former taken by the gouty should be strictly limited. Moreover, I find as the result of a lengthened series of investigations that whereas the mineral constituents of meat exercise a marked effect in diminishing the solvency of a gouty deposit the mineral constituents of most vegetables exercise a marked power in increasing its solvency. The vegetables whose mineral constituents I find are most efficacious in this respect are spinach, Brussels-sprouts, potatoes, cabbage, and French-beans. At the same time it must be borne in mind that with certain patients some of these vegetables may tend to produce some form of dyspepsia and I cannot too strongly urge that in the dieting of the gouty no hard and fast rules can be laid down, but the idiosyncrasy of each patient to various articles of diet must be made the subject of careful observation and study. The following plan gives an indication of the diet to be recommended:—

Morning.—A pint of hot water flavoured with a slice of lemon peel should be slowly sipped immediately on rising.

Breakfast.—A selection may be made from the following articles of diet according to the taste of the patient: porridge and milk, fresh fish, fat bacon, eggs cooked in various ways, dry toast, tea infused for three minutes and then strained from the leaves.

Lunch and dinner.—No soup should be taken at either meal. The varieties of fish most suitable to the gouty are whiting, sole, turbot, and plaice. Meat should be taken at only one meal and then in moderate quantity. Two vegetables should be taken and in abundant quantities. The vegetables that, in my opinion, should be avoided by the gouty are asparagus, tomatoes, and green peas. Stewed fruits or baked apples or pears may with advantage be taken every day at one meal and a milk pudding made with rice, sago, or tapioca at the other meal.

Night.—A pint of hot water flavoured with a slice of lemon peel should be slowly sipped before retiring to bed.

Alcohol.—As regards the employment of alcohol each case must be individually and carefully dealt with. If the gouty person be of robust habit of body then total abstinence is undoubtedly the best for such a patient. If, however, the cardiac action be weak and failing then moderate quantities of alcohol should certainly be given. In cases of chronic gout a moderate amount of alcohol may be necessary for the promotion of digestion. The best form of alcohol for the gouty is a tablespoonful of matured whisky freely diluted with salutaris or with plain water and taken towards the end of lunch or dinner. If any wine is taken by the gouty the one which is least open to objection is a good claret. Ale and stout should be avoided.

Mineral springs.—The use of a mineral water, so far as its employment with the object of removing the gouty deposit is concerned, lies solely in its watery constitutent, and does not in any way depend on the mineral salts dissolved in it. As a matter of fact the salts dissolved in a great many of the natural mineral waters are directly harmful in gout both by encouraging deposition of the sodium biurate and by checking solution of the gouty deposits. The flushing of the system of a gouty patient with abundant quantities of water is undoubtedly beneficial, since it dilutes the blood for the time and so tends to prevent uratic precipitation and at the same time promotes diuresis and encourages the elimination of urates. The question, however, naturally arises whether if the water of a mineral water be its only beneficial constituent for effecting removal of the gouty deposit the sending of gouty patients to spas presents any advantages over their drinking ordinary water at home. If the conditions of the life of the patient at home and at a spa were the same there would be no such advantages, but among the special benefits to be derived from residence at a spa must be reckoned the almost undistracted attention that is given by the patient to treatment, the careful dieting that is frequently observed, the change of surroundings, the absence of business or home worries and the opportunities for the use of thermal baths for the external treatment of articular gout. It should, however, be carefully borne in mind that owing to the undoubted fact that sodium salts are directly detrimental to the removal of the gouty deposit those springs should be avoided which owe their activity to those salts where the removal of the deposit is the main object sought for. The springs which contain no sodium salts or traces only are the ones suitable for such cases—such as the waters of Buxton, Bath, and Strathpeffer in this country; in France the waters of Aix-les-Bains, Contrexéville, and Vittel; in Switzerland the Pfaeffers water; in Austria the Gastein water and the Sauerling spring at Carlsbad; in Germany the Wildbad water. I wish it to be clearly understood that I am by no means condemning the very proper use that mineral waters containing sodium salts can be put to in the treatment of many gouty affections of the viscera and other structures,

but I wish to emphasise the point that when the system is flushed with a mineral water with the object of dissolving and removing gouty deposits then it is undoubtedly advisable to select a water as free as possible from sodium salts.

TREATMENT OF THE AFFECTED JOINTS.

Careful massage and gentle exercise of the stiffened joints should be resorted to, but only when convalescence is fairly established. The thermal baths of Bath, Buxton, and Aix-les-Bains are useful in the treatment of cases of chronic articular gout and successful results have been obtained by the localised application of very hot dry air which appears not only to relieve the pain and congestion of the joints but also to disperse the gouty deposit. In cases of chronic gout with painful affections of the joints or subcutaneous tissues a mixture containing ten grains of iodide of potassium with from five to ten minims of tincture of iodine is frequently beneficial, but such a mixture is contra-indicated if advanced kidney disease be present. After convalescence as much exercise as possible short of fatigue and discomfort should be taken in the open air. Cycling is an excellent form of exercise for the gouty, as the body-weight is borne by the machine, and good muscular movement in the open air is obtained without the gouty joints having to bear the weight of the body.

Weymouth-street, W.

IMPRISONED TOOTH: AN OBSCURE CAUSE OF CERVICAL ABSCESS.

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ALVEOLAR abscess, whether in the acute stage or at a later period when a discharging sinus in greater or less proximity to the offending tooth is the source of complaint, although apt to be overlooked by a casual observer rarely gives rise to any real difficulty in diagnosis. The situation of the abscess, the position and the direction of the sinus, the presence of a carious tooth which is more or less painful or tender to pressure, will generally sufficiently indicate the nature of the case. I have met with two examples in which the diagnosis was rendered difficult by the presence of unusual conditions, and although they belong to a class with which dentists and surgeons are by no means unfamiliar they are sufficiently uncommon to be worthy of record.

CASE 1.—A woman, aged twenty-five years, had for several years before she consulted me suffered much from pains in her left lower jaw. In 1891 she had one of the molar teeth extracted and shortly afterwards an abscess formed which discharged itself through the cheek at a point midway between the symphysis and angle. This abscess had been in the habit of closing, refilling, and bursting at varying short intervals ever since. Some months after the extraction of the first tooth all the remaining teeth on that side, including two which were quite sound, were removed, but still no improvement in the recurring abscess was effected. On the occasion of my first seeing the patient—viz., on March 14th, 1893—the sinus was discharging and by means of a probe bare bone was discovered at its distal end. Within the mouth the edentulous gum looked and felt firm and sound, affording no indication of disease within. The patient having been placed under ether I cut down upon the face of the jaw making the sinus the centre of the incision. On exposing the jaw a minute hole was discovered in it which, enlarged by means of a gouge, was found to communicate with a cavity of considerable size and in the cavity, completely surrounded by bone, lay a bicuspid tooth whose crown was partly destroyed by caries and one of the roots of which was thickened and rough. This was removed, the cavity was drained and the wound was sutured. In the course of a few weeks all was soundly healed.

CASE 2.—A man, aged forty-five years, was brought to me on Oct. 9th, 1897, by Dr. Foster, of Shipley, from whom I obtained the following history. Early in July the patient was attacked with pain all over the left side of his face and in the ear; the pain was so severe as to put a stop to work and to destroy sleep and appetite. Towards the end of the month a swelling formed extending from the ear to the chin on the outside and inside obscuring the angle of the jaw, the pillars of the fauces, and the tonsil. An incision into the internal swelling directed towards the lower jaw evacuated a small quantity of pus and gave a degree of relief. For a week or two pus continued to ooze from the incised wound and then it ceased. Subsequently a swelling formed in the neck and well below the angle of the jaw, and here on Sept. 2nd an abscess burst. This was followed by other points of suppuration, two of which were incised. At the time of my examination a cluster of sinuses disfigured the patient's neck all leading outside the ascending ramus of the jaw in the direction of, but not quite reaching as far as, the upper alveolus. By outward inspection and examination with a probe I was unable to determine the origin of the suppuration. There was no stiffness of the jaw, the mouth could be well opened, and an internal examination afforded no further clue. All the molars of that side, both upper and lower, had been extracted or had otherwise disappeared some six years before. There was no appearance of any of the wisdom teeth and he was unable to tell me whether or not there ever had been any. Suspecting a concealed tooth I examined both alveolar ridges very closely. That of the upper jaw struck me as being wider, thicker, and more substantial than natural, whilst the lower was sharp, firm, and compact. This observation led me at the operation, which was performed a day or two later under ether, to attack the upper jaw first, which I did somewhat extensively by means of a gouge with the result, however, of extracting only healthy bone. Upon this I was on the point of giving up the search after obtaining Mr. Moynihan's and Dr. Foster's assent to the improbability from its appearance of there being any fault in the lower jaw and trusting solely to the laying open and clearing out of the sinuses; but unwilling to leave any possible source of mischief unexplored and calling to mind the comparative frequency with which difficulty and pain and inflammation attend upon the eruption of the lower wisdom teeth I plunged a gouge into the site of the lower dens sapientiæ—viz., the point of junction between the horizontal and ascending rami—and at once I became conscious of having struck the marble-like surface which the crown of a tooth presents as contrasted with the dead, dull, wooden sensation conveyed by impinging upon ordinary bone. By a little manipulation I soon disentombed a full-sized wisdom tooth with just enough caries on its enamel and corrosion of its roots to satisfy me of its having been the originator of all the mischief of the preceding months. After the removal of this tooth the discharge from the sinuses at once ceased and in a few days they had entirely closed.

Difficulties, irregularities, and complications attendant upon teeth eruption are of common occurrence and are usually brought under the observation of the dentist. In both the instances I have related the opinion of the dentist had been sought and in the latter a throat specialist also had been consulted. Both, however, I think, may be claimed as belonging to the realm of surgery rather than to that of dentistry or any other specialty, and both, I venture to think, present points of sufficient interest to make it unnecessary for me to apologise for bringing them before the notice of the readers of THE LANCET.

Leeds.

VITALITY.[1]

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X.—THE INTERSTITIAL CIRCULATION IN ALL LIVING THINGS AND ITS CAUSES (*continued*).

IT is desirable to consider whether the results of observation and experiment justify us in proceeding yet further in our endeavour to discover some reasonable explanation of the continual flow of fluid holding nutrient and other substances in solution towards and into the very substance of every particle of living matter in nature. This movement of

[1] Nos. I., II., III., IV., V., VI., VII., VIII., and IX. were published in THE LANCET of Feb. 22nd, April 11th, June 13th, Aug. 29th, Oct. 17th, 1896, Jan. 23rd, July 31st, Sept. 4th, and Nov. 13th, 1897, respectively.

interstitial fluid, as I have already suggested, is intimately connected with vital action and vitality.

The centripetal movement of the interstitial fluid towards living matter is, I think, determined by the inherent tendency on the part of the constituent portions of every particle of bioplasm or living matter to move outwards—centrifugally. As far as I am able to ascertain this centrifugal movement of living particles is universal throughout living nature—unknown, nay impossible, in matter in any other state. This movement of portions of the living matter away *from centres* must occasion a movement of the surrounding fluid in the opposite direction—*towards centres*. The force and rate of the centripetal current will vary according to the activity of the outward vital movement of the living matter which occasions it and which varies in intensity in the same mass of living matter at different times and under different circumstances. From time to time the centrifugal vital movement is feeble and the movement of fluid towards centres will be correspondingly slow and perhaps almost quiescent.

Not only do vital movements occur in the constituent particles of living matter, but each bioplast as a whole possesses inherent power of movement. It may move round and round the space in the formed material in which it lies and which it has produced, or, as in fibrous tissue formed in straight or in curved lines, may move along leaving, as it were, behind it a thread or a thin layer of formed material to be applied and added to that which already exists. These and other movements of living matter in all living things are *vital* and cannot be imitated or caused to take place in any form of matter that is not living.

All bioplasts having reached a certain size—very different in different organisms—tend to divide, the resulting portions *moving away from one another in opposite directions;* or a mass of bioplasm may give off diverticula which, or portions of which, may be detached and may divide and sub-divide into many portions, each one inheriting the powers of the original mass and, taking up nutrient matter, will grow into the likeness of the parental bioplast.

Seeing that the interstitial circulation ceases at the death of the living matter or bioplasm in all parts and in all orders of life the consideration of its nature and object, its causes and importance in living organisms, involves an inquiry into the living state of matter, the conditions under which life is carried on, the nature of vital phenomena as far as can be ascertained, and the difference between matter in the living state and the same matter when it has ceased to live. But unfortunately the investigation of the actual vital changes is at present beyond the range of demonstration, though we can distinguish living matter from matter in other states or conditions and say *precisely which particles of matter in an organism are the seat of the wonderful vital phenomena—vital actions—by which living matter is absolutely marked off from matter of every other kind and in every other state—life of every kind from every kind of non-life.*

Although as yet unable actually to see the atomic movements which occur when the *non-living* becomes *living* we can prove that vital phenomena are not mere physical and chemical action or due to any known form or mode of ordinary energy. Life has been attributed to the conditions favourable to living, and some have argued as if they believed that *external* conditions could be the true cause of *internal life*. The external may destroy the internal, but under no circumstances can it give rise to life or be connected with it.

Associated with all vital power is directive agency determining special definite and prearranged changes—the *power* of conferring these and other remarkable powers in direct descent to non-living matter. It need scarcely be said that nothing like this has yet been discovered in connexion with any form of non-living matter. Broadly contrast the eternal passivity or never-ceasing repetition of infinite immensity with the constant activity and never-ceasing change of the comparatively infinitesimal life world. In every living particle, however minute, there is constant change in position and in the physical and chemical condition of the constituent molecules. There is *matter actually living, matter that has lived, and matter that is about to live. Living* necessitates these three states and, however minute may be the particle that lives, *living* as it occurs in our world is not conceivable in the absence of matter in these three states; but the actual isolation of the matter that lives, that is about to live, and that has lived is not possible at any given moment even in thought—so intimate is the association of the matter in these three states.

As the interstitial circulation seems to entirely depend upon vital phenomena I hope I may be permitted again to beg the reader's attention to the purely vital changes in the living matter. Careful observations upon structures and organisms in every class of living things—at an early period of development, in youth, in the period of maturity, and in old age, in states of activity and in repose, in health and in departures from the healthy state, in all normal tissues and in various morbid growths, have compelled me to conclude that *vitality is absolutely different from every other power, force, energy or property in nature.* It is, indeed, the power to which the direction, arrangement, movement of material particles in matter that lives is alone due. The structure, properties, composition, and action of all tissues is determined by the direct or indirect action of the vital power of living matter. In the absence of vital power the striking physical and chemical properties, the peculiar structural and other characters of the different forms of life, could not have been manifested. My general conclusions upon this most important question have been confirmed and extended by more recent investigations and will be found to be in accord with some of the facts and observations of other inquirers. They are, however, quite incompatible with the physical doctrines of life which for a considerable period of time have been forced upon the public and continue to be authoritatively taught though not supported by fact and reason.

Although there is nothing in any living organism that performs work like a machine made by us—movement, heat, light, electricity, and possibly other modes of energy are evolved by the transparent structureless living matter or bioplasm of different kinds, all of which consist principally of water, the evolution being associated with, and, in fact, dependent upon, the activity of the interstitial circulation.

The movements characteristic of bioplasm or living matter have long been called *spontaneous* and do not belong to the physical category.[2] Although frequent attempts have been made to account for them by physics or chemistry, these have entirely failed, and the advocates of physical doctrines have been compelled to resort to dogmas in order to support the views which they are determined shall be accepted. In vital movements there is no propelling, pushing or pulling. They may occur in any direction and are as freely performed in an upward as in a downward direction. They are not assisted or retarded by gravitation. In fact, in vital processes particles are raised and placed above one another—superposed—so that walls and tubes may be constructed and channels formed for the conveyance of fluid. The movements of living matter referred to are universally present in all living things but, as I have already remarked, are limited to these. Nothing has yet been discovered in any form of bioplasm that in the slightest degree justifies the application of such terms as mechanical—machinery—or apparatus, as suggested in many of the mechanical hypotheses advanced as explanations of vital phenomena. The so-called "molecular machinery" exists not, nor has anyone who has made use of this phrase attempted to explain what he means by it. Nothing that works like any known machine or apparatus for the conversion of energy can be pointed out in any known form of living matter. Again, we have been repeatedly assured that all the phenomena which distinguish living nature are due to the primary properties conferred upon matter at its creation, and which have lain dormant for many millions of years, until the accumulating influence of external circumstances or some undiscovered action of environment determined the evolution of the first living modicum. Such strange conjectures are still presented to the people, and by some accepted as if they had been proved to be true. In point of fact they rest upon mere authoritative assertion. They are not in accordance with the broad teachings of living nature or the constantly increasing facts discovered by careful microscopical observations by the aid of the highest powers now placed at our disposal.

What a particular living particle or a collection of living particles is about to form, chemistry cannot as yet decide, nor can the skilled microscopical observer ascertain in any given case whether the same evolutionary phenomena will be repeated time after time during ages, or whether by a new evolution a series of altered vital powers is about to be

[2] The movements of formed muscular tissue are in their very nature quite distinct from the vital movements of every form of bioplasm, the latter being in every direction—portions moving into and through one another. Muscular tissue and living matter are called protoplasm but muscular tissue will not produce new muscular tissue while the living matter of muscular tissue will do so.

inaugurated. Similar structures may be formed generation after generation, or new structures and new actions may become manifest for the first time. Divergent forms may soon cease to live or may be repeated again and again without change during ages, or the divergence may increase until forms very different in character may be evolved. Prophetic power still hesitates to define with confidence the probable characters which divergent forms to be produced in future years or centuries may assume. The form-evolving power of bioplasm depends upon its vitality rather than upon the substances it takes up as pabulum or the conditions under which it lives, though no doubt in some degree these influence the result

It is not possible to ascertain the dimensions of the most minute living particle which is capable of manifesting all the phenomena which establish its living property or power, but certainly it is considerably less than the one hundred thousandth of an inch in diameter. It is to the central part of such minute living particle that the streams of fluid holding certain substances in solution tend. It is in the central part that certain constituents or elements of the substances newly introduced pass from the non-living to the living state. This is where those mysterious changes occur which result in the communication of vital power from matters already living,—changes which have been attributed to the agency of "cell wall," "cell contents," "nucleus," "nucleolus." Some thought the mystery was solved when the word "Protoplasm" was coined; Protoplasm which by some authorities was affirmed to be structureless, by others to exhibit structure; Protoplasm which might be dry or moist, hard or soft, cold or hot, roasted or boiled, dead or living—and yet retain its protoplasmic properties, assimilating, converting, constructing, forming, building, designing—receiving its properties from solar energy or from the material elements of which it was composed, and possessing molecular machinery which under the influence of its environment performs vital acts and exhibits vital irritability!

The *unseen centres* of minute particles of bioplasm are the seat of those wonderful vital phenomena which consist of the re-arrangement of the atoms of matter, one result of which is preparation for future chemical and other changes. In the absence of vital action the subsequent formation of structure and the production and arrangement of matters having those definite and peculiar characters and properties by which the various living forms are known to us would have been impossible. It is not probable that if our means of amplification could be increased very many times we should be enabled to see the actual changes which take place in the invisible centres of living particles under the influence of vitality. The matter which is the seat of atomic movements is perfectly structureless and its elements must undergo extensive re-arrangement, portions moving in all directions and mixing with and passing through other portions—all which phenomena in all cases cease at death. In these structureless centres which no eye has yet seen the living matter imparts to new material particles, but without loss, the marvellous vital powers which it received from pre-existing living matter. It is here, too, that changes in vital powers resulting eventually in the development of characters diverging from those manifested by the immediate predecessors, occur. Here, then, is a true evolution—evolution from centres too central to be visible, where structureless, perfectly transparent particles move amongst one another in all directions, their state being diffluent, from the large proportion of water invariably associated with all matter that lives, and in the absence of which vitality is unknown. To these centres by inherent movements of the living particles streams of fluid, holding in solution certain substances, flow, to some of which vital power is imparted, and which then pass from the non-living to the temporary living state.

But well within the range of actual observation with the aid of magnifying powers of 500 diameters are the actual anatomical elementary units, hundreds and thousands of which are arranged together to constitute but a small part of, for example, an organ of sense.[3] So delicate and minute are these anatomical units and so closely are they packed that it is not possible to clearly see a single individual anatomical element with its connexions, or to make out with accuracy its several component structural parts. Nor is it possible to separate one from its neighbours and isolate it for accurate examination under high magnifying powers. We do not yet perfectly understand the exact structure or the arrangement of the several parts concerned in feeling, tasting, hearing, seeing or smelling or those taking part in evolving heat, light or electricity. It is certain, however, that in intimate connexion with each anatomical elementary unit are numerous bioplasts which are intimately concerned with the action of the sense organ, and which are an indispensable and indeed a necessary part of the arrangement. These bioplasts are present in great number in all living beings and take part in all vital actions of every organ in ourselves.

Think for a moment of the light-producing elementary parts of the illuminating organ of the glow-worm or the firefly as contrasted with any light-giving apparatus constructed by man—or of the anatomical elements taking part in the wonderful movements of the wings or legs of the smallest insects contrasted with any of our motor machines for moving things on earth or water or through air. Can any analogy whatever be pointed out between the structure that has *grown* and any of the mechanisms made by us—as regards origin, construction, composition or action?

(To be continued.)

[3] By the anatomical elementary part or unit is meant the complete arrangement necessary for seeing, hearing, &c., the actual organ being composed of a multitude of similar elementary parts.

THE ELIMINATION OF BACTERIAL TOXINS BY MEANS OF THE SKIN, WITH ESPECIAL REFERENCE TO THE PRESENCE OF TUBERCULIN IN THE SWEAT OF PHTHISICAL PATIENTS.

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THE body, in the words of Bouchard, in its normal as well as its pathological state is both a receptacle and a laboratory of poisons. These are disposed of by the economy in a variety of ways and by a variety of channels. Amongst the functions performed by the skin that of the elimination of poisonous substances has long been surmised, and in the following paper I hope to demonstrate that the general integument is an important emunctory for many of the toxins manufactured in the human laboratory by pathogenic organisms. Given appropriate means, it is in the sweat, the main vehicle of skin excretion, that we should expect to be able to find these poisons if they exist. Hitherto, however, the obtaining of this excretion under ordinary conditions in quantity sufficient for experimental purposes has placed almost insuperable difficulties in the way of its examination.

Methods of collecting sweat.—Arloing,[1] one of the first to investigate by the experimental method the physiological properties of sweat, obtained it by clothing a man in an absorbent woollen garment and setting him to hard and prolonged physical exertion in a hot atmosphere. He then steeped and wrung the vestment in a determined quantity of distilled water and concentrated on a water bath or *in vacuo* the diluted liquid so obtained. It is obvious that there are endless fallacies involved in such a procedure, and it is only necessary to mention the fact that Arloing himself points out that the sweat of individuals under such circumstances is much richer in toxic principles than that collected under normal conditions. Capitan and Gley's method[2] consists in enclosing the individual in a hot air chamber and removing the secretion with a sponge. Mavrojannis[3] envelops his subject in an air-tight indiarubber jacket next the skin, furnished with a small outlet tube and stopcock at its lower part. The sweat is then obtained as in Arloing's method by subjecting the individual to hard manual labour and drawing off through the exit tube from time to time the fluid which has gravitated to the lower part of the apparatus.

[1] Comptes Rendus de la Société de Biologie, tome iii., No. 35, Dec. 26th, 1896, p. 1107; and ibid., tome iv., No. 19, June 4th, 1897, p. 533.

[2] Ibid., tome iii., No. 35, 1896, p. 1110.

[3] Ibid., tome iv., No. 34, Nov. 12th, 1897, p. 943.

It is equally obvious that this method is not applicable to a patient in bed who is sweating moderately or even freely.

For the purpose of collecting sweat under these latter conditions I have had made a double-bulbed tube drawn out at one end to a very fine long capillary point, each bulb having a capacity of about 3 c.c., and a circular tin lid about four inches in diameter fitted around its edges with a small indiarubber air cushion. For a person sweating to the extent of having visible beads of perspiration on his skin or even mere visible moisture it is sufficient to streak the fine capillary point of the glass tube over the sweating surface, applying suction with the mouth from time to time to the expanded end in order to draw up the fluid into the first bulb. The interposition of the second bulb prevents any of the liquid ascending the straight part of the tube. It is surprising what an extremely minute quantity of moisture can be made to enter the capillary limb in this way and frequently in half an hour the bulb can be completely filled. With a patient sweating freely I have several times removed as much as half an ounce of sweat in this time. The tin cap can be placed on the front of the chest where the indiarubber air-cushion will fill up inequalities between the ribs, and two crossed pieces of strapping will keep the whole in position. No evaporation from the skin surface beneath then takes place, and the sweat often rapidly collects in beads sufficient to fill several bulbs within a short space of time. There is a further advantage in the apparatus in that the sweat is prevented from being absorbed by contact with the clothes or rubbed off by the movements of the patient. Several of these protecting caps can be placed on the skin at different parts of the abdomen, &c. They should be warmed to blood-heat before being fixed in position as this will prevent aqueous vapour volatilised from the skin from becoming condensed on their interior.

The night sweats of phthisis.—With this apparatus I have examined experimentally the qualities of the sweat from a number of phthisical patients. The *modus operandi* consisted in injecting a variable quantity of the sweat into guinea-pigs artificially rendered tuberculous by the prior inoculation of a living virulent culture of the tubercle bacillus. The animals' weights were taken daily and their temperatures thrice daily from the date of inoculation. In order to register the maximum effect of the sweat toxicity intravenous injection of the liquid into tuberculous rabbits was also practised. I have proceeded in this way with fourteen phthisical patients. All had advanced lung trouble with numerous tubercle bacilli in the sputum. No less than twelve specimens of sweat obtained by the above method from as many different cases gave a typical tuberculin reaction after inoculation into the diseased animals. A temperature chart which I have before me shows the characteristic rise following the introduction of 5 c.c. of sweat. The temperature of the animal, a guinea-pig, was taken every four hours for five days and was always about normal—i.e., about 102° F. At 10 A.M. on the sixth day 5 c.c. of sweat were injected. By noon the temperature had begun to rise; by 2 P.M. it was over 104° and by 3 P.M. it had reached its maximum—105·5°. By 4 P.M. it had fallen one degree; by 5 P.M. it was 103°; by 6 P.M. it was under 102°; and by 7 P.M. it had reached its lowest point—100·5°. On the morning of the following day the temperature was normal. Quantities necessary to produce the effect have varied from 3 c.c. to 7 c.c. With two of the patients, although undoubtedly tuberculous, I failed to obtain positive results. As control experiments I injected normal sweat into tuberculous animals and phthisical sweat into non-tuberculous. If the quantity of sweat did not exceed 10 c.c. no detectable effect on the temperature resulted except the initial fall which invariably occurs in small rodents as the result of the shock of the injection. With 5 c.c. or 6 c.c. the temperature was always sub-normal for several hours. There seems to be no reason for doubt, therefore, that the night sweat of phthisical patients contains tuberculin in notable quantity. To my mind this proves that these sweats are eliminative efforts on the part of the tissues, and that therefore the very worst treatment which we can adopt for our patients is that of attempting to arrest the sweating by atropine, picrotoxin, zinc oxide, or other antisudorific. The rational line of treatment seems rather to be the encouragement of the sweating by warm blankets, hot bottles, &c., and the enveloping of the patient in some garment of highly absorbent material, such as a nightshirt of Jaeger's texture or other woollen vestment of like nature.

Effects of normal sweat upon animals.—Before proceeding to detail the results of the injection of sweat containing other bacterial toxins it may be asked what are the physiological effects of normal sweat? Subcutaneously enormous quantities from a healthy man (from 60 c.c. to 100 c.c. or more) may be injected without producing any obvious effect upon rodents. Queirolo, for instance, in fourteen experiments was unable to excite any symptoms whatever, however great the doses employed. As a rule not even local irritation or subsequent suppuration is observed, though the liquid is very far from being aseptic. With very large but submortal doses (from 40 c.c. to 50 c.c.) given intravenously the animals may sometimes present mild rise of temperature, prostration, or slight paresis of the hind legs. Arterial pressure may be markedly lowered and loss of weight follows in the next three or four days. It may be noted, however, that no pathological effects of any sort are elicited by the introduction of such small quantities as those mentioned above as used in the examination of phthisical sweat. With regard to the intravenous injection of large quantities my results agree entirely with those of Mavrojanni, Capitan and Gley, Queirolo and Cabitto, and are in opposition to Arloing's. I have found that at least from 60 c.c. to 100 c.c. per kilogramme of animal are necessary to produce death in rabbits. This occurs at the end of from thirty-six to seventy-two hours, but such an event is distinctly rare. Subcutaneously it is impossible to kill animals with normal sweat, however enormous the dose. No rise of temperature with subcutaneous injection of normal sweat occurs unless quantities of at least from 30 c.c. to 40 c.c. are introduced. Capitan and Gley[4] in one experiment they quote noticed no pyrexia even after 45 c.c. intravenously followed by 50 c.c. subcutaneously in the same animal. Dogs are more sensitive to the toxic action of sweat than any other laboratory animal.

Pneumonic sweat.—The results are quite otherwise with pathological sweats. I have employed the sweat from four patients with acute lobar pneumonia collected from the beginning of the crisis onwards during the next few hours. The rabbit and the mouse, the animals most susceptible to infection with the pneumococcus, seemed to be the most suitable subjects for testing this variety of sweat upon. From ½ c.c. to 1 c.c. of pneumonic sweat injected into mice made the animals very ill. Their respiration became accelerated. They sat "hunched up" in a corner of their cage looking precisely like creatures which have been inoculated with living cultures of the pneumococcus itself. The sweat of one patient, a man in Stephen Ward, Guy's Hospital, killed two mice with the above symptoms in doses of ½ c.c. and 1 c.c. respectively. The critical sweats of pneumonia have, in fact, yielded positive results in every case I have examined and the animals inoculated therewith recall the exact clinical picture of pneumococcus septicæmia. Normal sweat in the same doses has no effect upon mice. Six c.c. of pneumonic sweat also profoundly affected a rabbit and sent up its temperature from 102·8° to 104·6°, this rise being associated with marked acceleration of respiration.

Diphtheria.—I have only twice been fortunate enough to obtain sweat from patients suffering from diphtheria. One of these was a child with laryngeal obstruction and urgent dyspnœa. Sweat was standing in beads upon her forehead and I obtained a large quantity in a few minutes. 4 c.c. and 6 c.c. respectively of this were injected into two small guinea-pigs of 220 and 260 grammes weight. In twelve hours each had a marked local swelling at the site of inoculation and they had lost 12 and 15 grammes respectively in weight. One was killed at the end of forty-eight hours and showed on section a large infiltration of a gelatino-serous character identical with that observed in experimental diphtheritic intoxication. The suprarenals also seemed somewhat redder than normal, though I cannot speak positively upon this point. The other guinea-pig continued losing weight for ten days and then recovered with necrosis of skin over its abdomen, exactly as occurs after introduction of the pure toxin. Skin necrosis never follows injection of healthy sweat. This observation as to the elimination of diphtheritic toxin through the skin I have confirmed by an experiment in another direction. A horse which was undergoing immunisation at the British Institute of Preventive Medicine with the object of obtaining an antitoxic serum exhibited at first a very unusual result of the treatment. On its arrival it was subjected to a preliminary testing with mallein and in an hour's time became covered

[4] Loc. cit.

with a profuse urticarial eruption. The same thing happened within half an hour of its first inoculation with pure diphtheria toxin. After its second dose of toxin in addition to the urticaria it was thrown into a profuse perspiration. I thereupon shaved an area of skin upon its flanks of about eight inches in diameter and collected some of the moisture in one of the bulbed tubes before described. This was injected into a guinea-pig and gave rise to a marked and typical local reaction.

Tetanus.—I have obtained sweat from one patient with acute traumatic tetanus, but though a considerable quantity was injected I obtained no positive effects.

Conclusions.—The above experimental evidence seems to me to have a practical bearing upon therapeutics inasmuch as it furnishes a rational basis for the old empirical method of treatment—viz., that of "sweating a fever." The artificial encouragement of the sweating no doubt assists in the elimination of the toxin by way of the skin leaving less behind to poison the tissues. I hope in a further communication to detail the results of the experimental examination of the sweat of patients with acute rheumatism, which I hope will assist in throwing some light upon the nature of the rheumatic toxin.

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ON THE SERUM DIAGNOSIS OF TYPHOID FEVER, WITH ESPECIAL REFERENCE TO THE BACILLUS OF GÄRTNER AND ITS ALLIES

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ELSEWHERE I have called attention to the possible importance in the serum diagnosis of typhoid fever of Landsteiner's observation made in Professor Gruber's Institute that Gärtner's bacillus reacts positively with typhoid serum. That the same occurred in the case of the serum of typhoid fever patients I demonstrated at Liverpool in February, 1897.[1] It seemed that further investigation should be made upon this point, and the recent epidemics at Maidstone, Clifton, and King's Lynn have afforded an opportunity for inquiry. I must here express my sincere thanks to Mr. P. Adams and Dr. Poole, of Maidstone, Dr. Lansdown, of Clifton, and Dr. Plowright and Dr. Sumpter, of Lynn, for most kindly giving me facilities for obtaining serum and also for sending me many samples at their own personal inconvenience.

Before entering into the question of the serum reactions it will be well to make a few preliminary remarks upon the bacillus enteritidis (Gärtner), an organism which has hardly received the attention that it deserves in this country and which must not be confounded with the unhappily named bacillus enteritidis sporogenes of Dr. Klein. Authors have been in the habit of grouping the typhoid and colon bacilli in rather a promiscuous way—the "typhoid-like" of one observer being a "colon-like" to another.

The whole class may be divided into three groups:—(1) the Eberth group includes the typhoid bacillus and its near allies (these are almost unknown); (2) the Gärtner group includes bacillus enteritidis and its near allies (these have not yet been sufficiently worked out); and (3) the Escherich group includes the true bacillus coli and its near allies (these also have not yet been sufficiently worked out). I do not propose to enter here into the discussion of further groups of bacilli which in some respects resemble those of Group 3, though widely differing from those of Groups 1 and 2.

In the literature of the subject it appears probable that members of the Gärtner group have been confounded with those of Group 1 and 2. However, they are not very difficult to distinguish in practice. In Germany, Holland, and Belgium, a number of outbreaks of "meat poisoning" have been carefully investigated; in many of these the causation of illness has been ascribed to certain bacilli or their toxic products, which bears a striking family resemblance to the original account of Gärtner; the individual differences which have been noticed are apparently comparatively of little importance. These bacilli have been isolated from the infected meat (often in the form of "German sausage"), vomit, and fæces, as also from the organs in fatal cases. A perusal of Dr. Günther's paper will show what care and patience may be required in working out a case of "meat poisoning" with success.

In the accompanying table in which the three groups are contrasted the description refers to characters which are presented by the actual bacillus of Gärtner at my disposal; so far as Gärtner's description goes, it is at variance only in the number of flagella (from four to eight) and the production of gas bubbles in lactose media. At the time when he wrote the technique of cilia staining was not so perfect as at present.[2] Other writers as well as Gärtner have given their bacilli credit of producing gas, though small in amount, in lactose media. As they did not use media free of muscle sugar ("bouillon") their statements are without value. The terms "paratyphoid" and "paracoli," about the relative merits of which there has been some discussion between Widal and Achard, do not appear to me to be at all appropriate; the group is evidently quite distinct from both typhoid and coli. Moreover, there are "Escherich-like" bacilli which are also unable to "ferment" lactose.

It will be observed that the bacillus Gärtner only differs from the bacillus Eberth in being able to produce gas bubbles in the presence of glucose (and muscle sugar), in possessing a greater power of overcoming the preliminary acid formed in the presence of glucose or lactose, and in reducing power. The expression "producing gas bubbles" is used here advisedly, since Hesse (vide Lösener) has shown that the typhoid bacillus can produce much gas (CO_2) though not as visible bubbles. (H_2S is also evolved.) The eventual alkali formation is dependent upon the amount and kind of sugar, the presence of oxygen, and the initial alkalinity of the medium. If twenty-four hours old cultures of neutral litmus-whey are exactly neutralised it will be found that the typhoid and Gärtner bacilli never become acid again, whilst the bacillus coli will form as much acid as it had already done before; although there is still plenty of sugar the two former do not decompose it into acid. Exactly the reverse is the case when cultures in 2·0 per cent. peptone, 0·1 per cent. glucose are neutralised. The great power of alkali production possessed by the bacillus Gärtner is no doubt causally related to the fact that it has a tendency to surface growth. Cobbett has shown that surface growth is necessary for alkali production by the diphtheria bacillus. To the Gärtner group belong the bacilli described by van Ermenghem, Fischer, Gaffky and Paak, Basenau, Cotta, Kaensche, Karlinsky, Günther, &c. Lubarsch has described a bacillus from a newly born child (without data concerning *flagella*, *gas*, or *indol*) which Gärtner reported on as being identical with his bacillus; however, it differs in that it clots milk (vide Gärtner's original description). Petruschky's bacillus fæcalis alkaligenes possibly belongs here also, so far I have been unable to obtain a culture to examine, the original description not being sufficiently detailed. The "typhoid" bacilli of certain authors "which have the power of gas production" almost certainly belong here too; also not improbably the cases of "septicæmic typhoid fever" described in France, in which "death occurred before typical typhoid lesions had been developed" were in reality due to a bacillus of this group and not to what we recognise as Eberth's bacillus. The different results given in the matter of reducing power are also cleared up to some extent by non-appreciation of this group by the several writers. My observations are quite in harmony with those of Germano and Maurea, in that I have yet to see a true typhoid bacillus which reduces sulphindigotate of soda as rapidly as the bacillus coli does. Another source of difference in the results lies in the constitution of the media, more especially in the presence of sugars, and naturally, also, the contact with oxygen. This I hope to deal with more thoroughly elsewhere.

There is yet one more question which is cleared up on the

[1] THE LANCET, Feb. 13th, 1897, p. 451.

[2] I am now quite convinced that this discrepancy is due to faulty staining method, since the culture just received from Dr. Günther, which is described to possess from two to five flagella when stained by Löffler's method, shows from ten to fourteen or more in specimens prepared by that of van Ermenghem. (Specimens were made from fresh four-hour and twenty-hour cultures directly after the receipt of the culture.)

TABLE CONTRASTING THE TYPES OF THE EBERTH, GÄRTNER, AND ESCHERICH GROUPS.

—	1. EBERTH GROUP.	2. GÄRTNER GROUP.	3. ESCHERICH GROUP.
Superficial colonies on gelatin plates*	When typical thin spreading, sulcate; atypical colonies however occur.*	Granular, not sulcate.	May be sulcate or granular; usually rapid spreading.
Rate of growth on gelatin*	Slow.*	Medium.*	Fast.*
Motility	Very active.	Very active.	In general less active.
Flagella...	10 or more.	10 or more.	8 or less.
Acid produced in *neutral* litmus whey after twenty-four hours at 37° C.	2·5 to 3·5 per cent.†	2 to 3 per cent.	6 to 8 or more per cent.
Ditto, after from four to five days at 37° C.	Acid (less than 6 per cent.).	Alkaline (1·5 per cent.).	Acid (more than 10 per cent.).
Nutrient agar or broth with grape or muscle sugar at 37° C.	No gas bubbles.	Gas bubbles.	Abundant gas bubbles.
Nutrient gelatin at 18° to 20° C. with grape sugar	No gas.	No gas.	Abundant gas.
Media with lactose free from other sugars ...	No gas.	No gas.	Gas.
Litmus neutral solution of 2 per cent. Witte's peptone and 0·1 per cent. glucose (Capaldi, Proskauer) after twenty-four hours at 37° C.	Acid (1·5 per cent.).†	Acid (3 per cent.).	More acid (5 per cent.).
Ditto after several days	Acid (6 per cent.).	Alkaline (3·5 per cent.).	Alkaline (e.g., 2 per cent.) or neutral.
Ditto eventually	Generally becomes alkaline.	Alkaline.	Alkaline.
Milk at 37° C.	Never clotted.	Never clotted.	Clotted in from twenty-four to thirty-six hours.
Reducing power (0·2 c.c. of ½ per cent. indigo-carmine per 10 c.c. of nutrient agar or gelatin)	Slow.	Very rapid.	Moderately rapid.
Potato juice agar‡ at 37° C.	Scanty translucent.	Rather scanty translucent.	Abundant opaque.
Potato (parallel streak with typhoid bacillus) twenty-four hours at 37° C.	Invisible or hardly visible.	Generally just visible.	Abundant yellowish.
Indol formation	Absent.	Absent.	Present.
Serum reaction with:—potent typhoid serum	Always positive; extent variable.	Generally positive; but not in high dilution as 1: 50,000 or more.	Never positive even in low dilution as 2: 100.
,, ,, potent Gärtner serum	Rather variable.	Positive, but not universally in the group.	Negative.
,, ,, potent "coli" serum	Negative.	Negative.	Variable.

* Much depends upon the exact constitution of the gelatin, especially the length of time it has been heated (during filtration &c.).

† These figures represent the percentage of $\frac{1}{10}$ normal NaOH requisite to neutralise the acidity or of $\frac{1}{10}$ normal H_2SO_4 in the cases where alkalinity is present.

‡ This is prepared by extracting starch-free potato juice (as described by Holtz in the Zeitschrift für Hygiene, Band viii., p. 143) and adding from 1½ to 2 per cent. agar: a clear brown medium results. I find this shows differences better than the clumsy method of "parallel culture." For purposes of comparison cultures are made upon the same batch of medium.

supposition that Gärtner-like bacilli have been mistaken for those of the other two groups. Demel and Orlandi, amongst others, have stated that animals immunised against the typhoid bacillus are also immune against the bacillus coli. Now according to my experiments, it is clear that the complete sedimentation effect *in vitro* by a given highly diluted active serum is always associated with protective properties when the experiment is made with an animal. Many of those who have ventured to criticise my statements have apparently considered that I hold "agglutinins" and "protective substances" to be identical. That which I have indeed laid stress upon is the fact that sera which have high clumping power also have considerable protective power,[3] *but it does not follow from this that sera which have little or no clumping power have also no protective power.* Again others have gone further astray and argued that since certain normal, and other non-specific, sera have agglutinating power when in a concentrated condition these sera ought also to possess protective qualities. I must reserve further remarks upon this topic to a paper in which I intend to deal especially with the serum reactions of the bacilli included between typhoid on the one hand and coli on the other; it would be quite useless to draw any inferences on the topic until all the obtainable new races of this class of bacilli react with one or other of the sera in my possession. Although many different kinds of serum are at my disposal (my collection was commenced in 1895) and others will shortly be so, there are still many sera to be prepared. From present experience it is clear that the inquiry on this point must be complete if it is to be of any real value. It will be readily understood that this is no light undertaking. The observation that there are differences between various races of typhoid bacilli[4] observed *in vitro* has been confirmed by Pfeiffer and Koll *in vivo*. There are also differences in the action of different kinds of typhoid races upon those of the Gärtner group not only in the sedimenting but also in protective effect; in fact these bacilli afford confirmation of the correlation of protecting and agglutinating substances. Those typhoid sera which are efficient *in vitro* have considerable protective power against the two members of Gärtner group which I have tried.

In the accompanying tables of the reactions of sera obtained from typhoid fever patients in different localities three Eberth and two Gärtner group cultures have been used. Typhoid fever ("THS") has only a very slight *mutual* serum reaction with Gärtner ("Gärt"), practically none with the Gärtner-like "Ös"; typhoid fever "W" gives (mutually) complete reaction with "Gärt" and distinct with "Ös"; typhoid fever "BW" is intermediate in its action. "Gärt" and "Ös" react *mutually* in low dilution such as 1:200. The method employed has been practically that of Professor Wright, of Netley, specimens of different dilutions being made in capillary tubes. Having controlled the results given in many parallel observations made by this method with those given by the microscope alone, I venture to assert that his method is by far the most valuable that we are in possession of and on the whole leads to less equivocal results—that is to say, when the criterion of measurement of potency is the ultimate dilution in which reaction can be detected—and for the purposes of testing human sera this is the best criterion. The method I have advocated (finding the least percentage of serum which will completely precipitate a given amount of bacilli at a given temperature in a given time), is of less value in the case of man, because it is not common to find samples which will give "complete"

[3] In fact a reaction of the reaction to infection; but by no means a "reaction of infection" as any experimentalist can demonstrate.

[4] Journal of Pathology, 1896, p. 35.

TABLES SHOWING THE REACTIONS OF THE SERA OF PATIENTS SUFFERING FROM TYPHOID FEVER.

In these tables a well marked positive reaction is indicated by +; a slight positive reaction by *; a trace of reaction by "tr"; doubtful, if any, reaction by ?; negative reaction by 0; and no observation by —.

—	KING'S LYNN.—No. 1.			KING'S LYNN.—No. 2.			KING'S LYNN.—No. 3.		
—	THS.	Gärt.	Ös.	THS.	Gärt.	Ös.	THS.	Gärt.	Ös.
1:20	+	+	*	+	+	+	+	+	—
1:100	+	+	0	+	+	0	+	*	—
1:200	+	?	0	+	tr	0	+	tr	—
1:500	+	0	0	tr	0	0	+	0	—
1:1000	tr	0	0	0	0	0	+	0	—
	42nd day: severe attack with relapse.			38th day: severe attack.			End of third week.		

—	MAIDSTONE.—No. 1.				MAIDSTONE.—No. 2.				MAIDSTONE.—No. 3.			
—	TBW.	TW.	Gärt.	Ös.	TBW.	W.	Gärt.	Os.	TBW.	TW.	Gärt.	Ös.
1:20	+	+	+	0	+	+	+	0	—	—	+	—
1:100	+	+	+	0	+	+	+	0	—	+	+	—
1:200	+	+	*	0	+	+	+	0	—	+	0	—
1:500	+	+	0	0	+	+	+	0	—	+	0	—
1:1000	+	+	0	0	+	+	0	0	+	+	0	—
	Six weeks' irregular fever with rigors; clinically doubtful typhoid fever.				45th day: sharp attack; relapse.				Age two years and three months. 34th day: severe attack; relapse.			

—	MAIDSTONE.—No. 6.				MAIDSTONE.—No. 10.				MAIDSTONE.—No. 11.		
—	TBW.	TW.	Gärt.	Ös.	THS.	TW.	Gärt.	Ös.	THS.	Gärt.	Ös.
1:20	+	—	+	—	—	—	—	—	+	+	
1:100	+	+	+	—	+	+	+	*	+	+	0
1:200	+	+	?	0	+	+	+	?	+	?	0
1:500	+	+	0	0	*	+	*	0	+	0	0
1:1000	—	—	—	—	0	+	0	0	+	0	0
	43rd day: relapse.				Typical typhoid fever, 60th day.				30th day: relapse.		

—	MAIDSTONE.—No. 8 (SERUM FROM PUS).			MAIDSTONE.—No. 16.			MAIDSTONE.—No. 13.		
—	THS.	Gärt.	Ös.	HS.	Gärt.	Ös.	THS.	Gärt.	Ös.
1:20	—	—	—	—	—	—	—	—	—
1:100	+	tr	0	+	0	0	+	+	0
1:200	+	0	0	*	0	0	+	*	0
1:500	*	0	0	0	0	0	*	0	0
1:1000	?	0	0	0	0	0	tr	0	0
	Pus from glandular abscess undoubted typhoid.			Severe relapse.			26th day.		

—	CLIFTON.—No. 1.				CLIFTON.—No. 2.				CLIFTON.—No. 3.				CLIFTON.—No. 4.			
—	THS.	TW.	Gärt.	Ös.	THS.	TW.	Gärt.	Ös.	THS.	TW.	Gärt.	Ös.	THS.	TW.	Gärt.	Ös.
1:20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1:100	+	+	+	*	+	+	+	0	tr	*	*	tr	+	+	+	—
1:200	+	+	+	0	+	+	*	0	?	tr	?	tr	+	+	+	tr
1:500	+	+	+	0	*	+	tr	0	0	?	0	0	*	tr	*	0
1:1000	+	+	*	0	tr	+	0	0	0	0	0	0	tr	tr	?tr	0
	Sent as typical typhoid fever.				Sent as typical typhoid fever.				Sent as typical typhoid fever.				Sent as typical typhoid fever.			

reaction when sufficiently diluted (e.g., 1 per cent.), and observed in columns not less than 1 cm. in diameter; in the diagnosis of bacilli, however, I believe this method to be indispensable. Broth cultures twenty hours old have been used in each case; since "Gärt" and "Os" both grow more abundantly than the typhoid cultures and also tend to the formation of a pellicle; these were filtered through filter paper and diluted with broth so as to be equally turbid with the typhoid cultures. Extra controls were afforded by specimens (not tabulated) from typical or doubtful cases of typhoid fever which failed to give any reaction with any of the bacilli tried.

In some instances the quantity of serum was not sufficient to give many trials; in others I have reserved some for further testing with other races of bacilli (Dr. Günther, of Berlin, has already most kindly replied to my request for a specimen of the bacillus he isolated). The differences between the samples are of sufficient interest in themselves without waiting for the delay that must ensue before other races of bacilli are to hand.

In these tables, showing the reactions of the sera of patients suffering from typhoid fever, it will be noticed at once that in dilutions lower than and including 1:100 it is immaterial whether true typhoid or Gärtner's bacillus is used to obtain a *typhoid reaction*. In the following cases the Gärtner reaction is stronger relatively, the typhoid reaction being weak or absent.

Cases with Predominant Gärtner Reaction.

	W. AUSTRALIA (Dr. B.). Typhoid fever, December, 1896.				KING'S LYNN, No. 4.			KING'S LYNN, No. 5.		
	THS.	TW.	Gärt.	Os.	THS.	Gärt.	Os.	THS.	Gärt.	Os.
1: 20 ...	0	0	+	+	-	-	-	+	+	+
1: 100 ...	0	0	+	*	0	+	0	+	+	tr
1: 200 ...	0	0	+	tr	0	*	0	*	+	0
1: 500 ...	0	0	0	0	0	0	0	tr	+	0
1:1000 ...	0	0	0	0	0	0	0	0	?	0

Two cases of undoubted typhoid fever (34th and 27th days) and six doubtful cases reacted negatively to all the bacilli.

Whilst the cases and the races of bacilli are too few to draw any final conclusions it is rather striking that these Lynn and Australian sera exhibit more marked action upon Gärtner's bacillus. I myself had an attack of ill defined nature (which I thought was typhoid fever at the time) in April, 1896 (immediately after the Wiesbaden Congress) during which I travelled about (in a decrepit condition); about a year ago my serum reacted well on typhoid bacilli in 1:200, six months ago in not more than 1:100 (unfortunately it was not then tested with Gärtner), it then fell to 1:20; a few weeks ago it had no effect upon typhoid but still reacts slightly with Gärtner (1:200). The question naturally arises whether my attack and the W. Australia and Lynn, Nos. 4 and 5 were in reality due to a bacillus of the Gärtner group. To answer this question it is necessary to consider how far the serum reaction is "specific"; already in our earlier observations Professor Gruber and I came to the conclusion that these reactions, as observed with cholera and allied vibrios as well as with the typhoid, Gärtner's and colon bacilli, could not be regarded as truly *specific*; indeed, I suggested that the word *specific* should give place to the word *special*. Since commencing to work at the subject in November, 1894, I have not seen reason to alter my views, for experiments both in vitro and in vivo tend towards the same conclusion. In the diagnosis of bacilli by means of serum reactions it is necessary to have extremely potent samples of serum and to use minute quantities of them. This was laid down originally by Pfeiffer as the result of his animal method, and it is still more true, when the recognition is made by means of clumping and sedimenting effects, as Professor Gruber insisted when he first called the attention of the world to the visible reactions given by typhoid patients' sera. As instances of the marvellous degrees of potency which can be acquired by prolonged (and fortunate) treatment I may state that I have succeeded in getting a sample of "coli serum" which still gave a definite reaction in a dilution of 1 in 2,000,000 on two separate occasions with its own race of coli (the higher dilutions yet tried were 1 in 20,000,000 and 1 in 200,000,000, at which points there was no effect); sera which manifest their presence in 1 in 50,000 to 500,000 are not so difficult to obtain. Now the sera obtained from typhoid fever patients are not potent enough to give absolute indications (in the large majority of the samples I have examined as well as in the above questionable cases) either for diagnosis of bacilli or of the nature of the serum. The results in the tables given above are also evidence in the same direction. So far as I have seen, serum diagnosis in man merely gives an indication of a probability; unless (judging by the effects of extremely potent sera from artificially immunised animals) the reaction is strong in greater dilution than 1 in 1000 (using Wright's method, or 1 in 100 in my own method, macro- and microscopical); microscopical observation alone is not quite so easy, the appearances being often difficult to interpret.

Persistence of the reaction against a given bacillus after it has been lost against allied bacilli is in favour of the original infection having been due to that bacillus.

Since there has been some discussion concerning the length of time that a serum reaction may persist, I would call attention to the fact that several cases are on record in which abscesses due to the typhoid bacillus have occurred five, six, and seven years after the typhoid fever attack. This seems to be more to the point than any discussion on a time limit. Widal has recently published some account of a "para-coli" bacillus from an abscess; his description of the cultural relations and serum reactions are too wanting in precision for discussion here.

Should these lines meet the eye of anyone who has to deal with an outbreak of "meat-poisoning," the clinical course of which may be somewhat typhoid-like according to description, I may say that I shall be more than willing to examine samples of the serum taken from the sufferers; by such means there is a chance of approaching the truth of the matter. Unfortunately all meat-poisonings are not due to Gärtner's bacillus or its congeners.

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Cambridge.

CASE OF RHEUMATISM WITH FREQUENT COMPLICATIONS.

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A MAN, aged twenty-two years, sent for me on the night of Dec. 31st, 1896. He stated that he had not been feeling well for some time, that he had had an attack of influenza about a fortnight previously, and that he now felt much the same as he did then, only worse. He had the usual febrile symptoms, considerable muscular aching, and much prostration. These continued and increased during the next four or five days, the temperature rising to 103·6° F. and the prostration becoming more marked. He was treated at first with twenty grains of salicylate of soda every four hours, but he soon showed great intolerance of this, nausea and severe pain in the back being produced, which ceased when the drug was withheld and returned when it was again tried. On Jan. 5th, 1897, Dr. Hector Mackenzie kindly came to see him. He thought that although there had hitherto been no abdominal symptoms the case would probably turn out to be typhoid fever. No local complication could be

found to account for the persistence of the fever. In the course of another day or two, however, definite rheumatic indications occurred in the ankles, knees, and shoulders and profuse acid perspirations broke out. Salol was then given and well tolerated, the general symptoms improved, and the case followed the ordinary course of subacute rheumatism until the 17th. On this day the temperature rose to 102° and pleurisy on the right side occurred. This shortly subsided and the patient made a steady though tedious recovery. Up to the present the heart had not been involved.

The patient's bedroom was situated on the top floor and during his illness other members of the family complained of an unpleasant smell in the breakfast room in the basement. In consequence of this the landlord's agent had the boards taken up and disinfecting powder was applied. This apparently abated the nuisance. In the second week of February the patient was able to leave his room, but he was not allowed to enter the basement or to use the water-closet. I was then seeing him occasionally, but on Feb. 13th I was again sent for in the evening. I found that the temperature had run up to 103·4° and that severe sore-throat was complained of. There was a light whitish film over the left tonsil which was swollen and inflamed. I gave an opinion that the attack was probably diphtheritic and ordered an iron and chlorate of potassium mixture every two hours and the throat to be frequently swabbed out with carbolic glycerine. This being late on a Saturday evening it was impossible to get any antitoxin, but some was obtained in the course of the following day and 10 c.c. were injected at 8.30 P.M. By this time all the symptoms were much intensified, the temperature was 104·4°, the membrane had become well marked, and had spread to the other side of the throat. The result of the injection was all that could be desired; the temperature began to fall at once, the throat became easier, and the patient had some sleep. During the following day (Monday) the improvement continued, but the temperature rose in the evening to 103°. After this the membrane began to loosen and was expectorated in flakes. By Tuesday morning the temperature had fallen to 100·8° and the throat was practically well. On that evening, however, the remarkable feature in the case occurred. The patient complained of difficulty in breathing and fulness in the chest. On examination I found a loud pericardial friction sound and a mitral murmur; the temperature again rose and the sour perspirations recommenced. The attack of diphtheria (or the antitoxin?) had evidently induced a relapse of the rheumatism in its most serious form. This continued in the acute stage for several days and the patient appeared in considerable danger of collapse; brandy was given freely and strychnine was injected hypodermically. Severe reflex pains in the neck and shoulders set in, for which morphia had to be given. Dr. Hector Mackenzie again saw the patient on the 19th. Salol was recommenced and in the course of the next few days the temperature fell to a little above normal and the pericardial effusion somewhat diminished. During the whole of this relapse the perspirations were unusually profuse. On the 27th the temperature again rose suspiciously about 6 P.M and this became more marked on the 28th and on March 1st. On the 2nd Dr. Sharkey saw the patient and by this time there were some physical signs of commencing right pneumonia. The temperature again ran up to 104° and the patient once more became very ill. The pneumonia spread over the greater part of the right lung and the pleura became affected causing great pain. Four leeches were applied and morphia had again to be injected. Dr. Sharkey advised quinine and digitalis which were given in place of salol. The pneumonia followed a very painful but adynamic course, the temperature seldom rising above 101° and there being no cough or sputa. Great discomfort was caused at this time and subsequently by flatulent distension of the stomach and colon. In the early morning of the 7th the temperature suddenly went up from 99° to 102·6° and severe pain set in below the *left* nipple. Pleuritic friction was found and this was rapidly followed by considerable effusion. The patient had now at the same time endocarditis, pericarditis, right pleuro-pneumonia, and left pleurisy with effusion; he had also recently gone through two exhausting attacks of rheumatism and one of diphtheria. His condition was necessarily very grave and symptoms of collapse again set in. Brandy and strychnine were freely resorted to; hot-water bottles and friction were applied to the extremities. He very gradually began to rally and from this time made a slow but steady recovery. The heart gradually improved, the murmur ultimately disappeared, and the patient has been able to cycle moderately during the summer. He went in October last on a visit to India.

It should be added that the diagnosis of diphtheria was verified bacteriologically and that the sanitary authority discovered a defective soil pipe communicating with the basement. I need hardly say that the patient was most excellently and intelligently nursed and that to this his recovery is largely due.

West-hill, Putney, S.W.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

LEWISHAM INFIRMARY.

A CASE OF PERFORATING GASTRIC ULCER; LAPAROTOMY; RECOVERY.

(Under the care of Dr. F. S. TOOGOOD.)

IT is probable that the most important factor influencing the result of a laparotomy for a perforated gastric ulcer is the length of time which has elapsed since the perforation. In no recorded case has recovery ensued if the operation has been postponed for more than twenty-four hours [1] unless extensive peritoneal adhesions existed prior to the perforation. In the following case the operation took place about fourteen hours after the rupture. The sooner the operation is performed the better, though it has been considered advisable by some to wait until the reaction has replaced the first shock of the perforation.[2]

A domestic servant, aged twenty-one years, was admitted into the Lewisham Infirmary, about 1.30 A.M., on Sept. 17th, 1897, with the history that she had been suffering from gastric ulcer for some months past and had been attended by Mr. Lennard Stokes. On the 16th, soon after noon, she was seized with sudden acute pain in the region of the stomach and she fainted. Mr. Stokes promptly diagnosed the rupture of the ulcer, and as soon as the necessary arrangements were completed she was conveyed to the infirmary. On admission she was suffering severely from collapse; her pulse was 130 and very feeble and the respirations were 34, almost entirely thoracic and shallow. She complained of intense pain over the whole abdomen the wall of which was rather distended and was kept very rigid. Percussion revealed that the liver dulness had disappeared in front. Mr. E. R. Badcock, the assistant medical officer, administered chloroform, and Dr. Toogood opened the abdominal cavity by an incision three inches long between the xiphoid cartilage and the umbilicus; there was a considerable amount of free gas in the cavity. The stomach was seen lying quite collapsed and was found attached by a ring of adhesions to the anterior abdominal wall; a portion of these adhesions had broken down and the forefinger could easily be passed into the stomach. This attachment necessitated the original incision being continued for about three inches along the left costal margin, when the site of the ulcer was thoroughly exposed. The adhesions were divided with care, but no vessels required ligature. The ulcer appeared as a punched-out hole of the size of a sixpence. The condition of the patient was so alarming that it was decided not to pare away the thickened edges of the ulcer; accordingly the gap was drawn together by twelve Lembert sutures, using 00 Chinese twist silk and a very fine milliner's needle. Nearly a pint of dark fluid mingled with débris of food was sponged out of the abdomen and several gallons of sterilised water at a temperature of 110° F. were used in washing out the peritoneum.

[1] A. V. Atheston: New York Medical Record, Jan. 5th, 1895.
[2] Brit. Med. Jour., Oct. 20th, 1894.

Special attention was paid to the liver and the interstices between it and the diaphragm, which as well as Douglas's pouch were well sponged out, and a thick strand of cyanide gauze was passed on each side well down to the posterior edge of the liver. The incision was now closed by silkworm gut sutures except at the upper angle where the gauze drains were protruding. The wound was dressed on the same day at 6 P.M., when the gauze drains were removed; that from the right side being almost dry was not reinserted, but that on the left was replaced by a Keith's glass tube, having a cyanide gauze wick in its centre. During the next forty-eight hours the wound was dressed four times, a good deal of cloudy serum collecting in the tube; but this having ceased the tube was removed sixty hours after the operation. Immediately after the operation the temperature sank to 99·4°, but eighteen hours afterwards it had risen to 103·6°. However, it again sank, and after a few unimportant fluctuations it gradually became normal and remained so after the fifth day. The pulse improved with the temperature. Three minims of morphia injected hypodermically with one-fiftieth of a grain of strychnine were given every twelve hours for three days. A teaspoonful of hot water was allowed by the mouth every two hours. Dr. Toogood has found that with a long tube and with great care and slowness a nutrient enema measuring a full pint may be successfully given and this amount of peptonised milk with Liebig's peptone of beef was administered every six hours, while the bowel was thoroughly washed out once in the twenty-four hours with a simple enema. Seven days after the operation fluid food was commenced by the mouth one ounce of peptonised milk flavoured with Benger's or Mellin's food being given every four hours. After a lapse of two days this amount was given every two hours and this was gradually increased until in three weeks' time five ounces every two hours were being taken. Twenty-five days after admission the nutrient enemata were discontinued and arrowroot was given by the mouth, and after the thirty-first day three ounces of pounded chicken were taken daily and after the lapse of another week the patient was able to take an ordinary light diet. The wound healed by first intention with the exception of the track caused by the tube, which granulated slowly but it was soundly closed in three weeks. About the tenth day a good deal of abdominal pain was complained of which caused much perplexity until a too sympathetic fellow patient was detected administering bread and butter. The pain ceased with the sympathiser's removal. The patient was discharged plump, ruddy, and well on Nov. 20th.

Remarks by Dr. TOOGOOD.—I have entered closely into all the details of this interesting case in the hope that the information may be useful to those who might otherwise, like myself, have had to grope with anxious and fearful steps along the slippery, dark, and rock-bestrewn path of "after-treatment."

ROYAL INFIRMARY, SHEFFIELD.

A CASE OF SELF-INFLICTED WOUND OF THE ABDOMEN; OPERATION; DEATH.

(Under the care of Mr. ARCHIBALD CUFF.)

THE treatment of penetrating wounds of the abdomen has undergone a great change during recent years. Formerly—if after a penetrating wound there was no evidence of injury of any viscus—it was considered advisable not to explore but to close the wound. It was, however, gradually recognised that under this treatment serious injury of the intestine or other abdominal organ not infrequently occurred, and yet should it have given rise to no symptoms it passed unnoticed until the time had gone by when operative interference might have saved the patient's life. It is therefore becoming more and more the custom to explore by laparotomy all cases of wounds of the abdomen which have penetrated the peritoneum even when no evidence of deeper injury is present. The results justify this method of treatment—for instance, Gulotta[1] performed laparotomy in thirteen cases of penetrating wounds of the abdomen, and six of these, in which no lesion of the viscera was found, all recovered, showing that the operation does not add materially to the danger. In five of the thirteen cases the bowel was wounded in one or more places, and of these only one died. In the two other cases the liver was wounded and one of these also succumbed. The fatal result in the very interesting case reported below was probably due to the profuse hæmorrhage which had occurred before the operation. The case also demonstrates the value of saline infusions, but the failure of the axillary injection does not necessarily invalidate its claim to be of service in some instances, for obviously there must be cases in which no injections can succeed in saving life. For cases in which rapidity of action is of importance the intravenous injection of saline solution is probably the most satisfactory.

The patient, a man aged thirty-one years, was admitted into the Royal Infirmary, Sheffield, on Dec. 29th, 1897, about 10 15 P.M., having nearly two hours previously stabbed himself in the abdomen with (presumably) his pocket knife. The stab had been made after baring the abdomen and not through the clothes. The lower part of the body and his trousers were soaked in blood. The patient was in a condition of collapse. On examining the abdomen there was seen to be an incision about one and a half inches in length in the middle line and commencing above at the umbilicus. A coil of unwounded small intestine was protruding but no blood was escaping from the wound. He was immediately taken to the operating theatre and ether was administered, as owing to his restlessness the attempt to do without an anæsthetic was not persevered in and the skin of the abdomen was rapidly cleansed and shaved. The wound was prolonged upwards, when it was seen that the peritoneal cavity was full of extravasated blood, a quantity having gravitated into the pelvis. An artery in the transverse meso-colon was found to be bleeding freely although the pulse at the wrist was at the time imperceptible. This was clamped and further interference suspended as the patient appeared to be moribund. Infusion of normal saline solution at a temperature of 107° F. was resorted to and he revived and his condition remained fair during the rest of the operation. A farther search in the abdomen revealed the transverse colon cut sharply across, its ends being widely separated and pointing towards the anterior abdominal wall. The bowel appeared to be empty and not a trace of fæces was to be seen in the peritoneal cavity. No other lesion was apparent. The patient's condition seemed to warrant the attempt to suture the bowel ends and not to be content with bringing them up into the wound as was Mr. Cuff's first impulse, and they were brought together over a Robson's bobbin. Unfortunately this was a difficult and tedious operation owing to the layers of omentum and tags of fat present at the injured spot, and it would have been preferable to have sutured the bowel without any bobbin at all, or possibly even better to have used a Murphy's button. The bleeding points having been ligatured, the peritoneal cavity flushed out with warm sterile water, a tampon of gauze placed about the sutured intestine, and a drainage tube pushed into the pelvis, the abdominal walls were sutured. In spite of every method of stimulation used the patient sank and died six hours after admission. The hypodermic injection by a large syringe of saline solution at a temperature of 110° into the axillæ did not yield the stimulatory effects which Mr. Cuff had anticipated after reading the descriptions by other surgeons. A similar result occurred in a case of severe shock after removal of a large renal sarcoma in which this method of infusion was resorted to.

Remarks by Mr. CUFF.—Instances of suicidal wounds of the abdomen are not common in this country and it does not often fall to the lot of one individual to have to treat two such cases within two years. About eighteen months ago I published[2] the notes of a case of extensive wound of the abdominal wall, opening the peritoneal cavity and accompanied by considerable hæmorrhage, the patient making a good recovery. In the case recorded above the wound was of small extent but the damage done was greater, as a piece of intestine was cut across, the hæmorrhage was most severe, and the result unfortunately was fatal. The case teaches the necessity for carefully exploring the abdomen after a penetrating wound however small. Here the hæmorrhage from the wound appeared to have ceased and the bowel at the site of the wound was undamaged. The section of the empty large bowel by a stab wound and the separation of its two ends were also interesting. Curiously my first patient came to see me to-day (Jan. 3rd, 1898)

[1] Riforma Medica, Naples, 1895, p. 184.

[2] THE LANCET, May 30th, 1896.

with a sprained foot incurred while taking part in a paper-chase across country. It is interesting to find that the scar is firm and unyielding, no trace of hernia being apparent. I am indebted to Mr. G. H. Shaw, senior surgeon of this institution, for permission to treat the case and now to publish these notes.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Adjourned Discussion on the Prevention of Enteric Fever.

A MEETING of this society was held on Jan. 11th, the President, Dr. HOWSHIP DICKINSON, being in the chair.

The PRESIDENT announced that Dr. Robert Barnes had returned his debentures to the value of £200 as a donation to the society, and a cordial vote of thanks was passed to him.

The adjourned discussion on the Prevention of Enteric Fever was continued by Dr. CORFIELD, who controverted Dr. Poore's contention that the prevalence of typhoid fever was the direct result of the adoption of the water-closet and water-conveyance of sewage. As a matter of fact the mortality from typhoid fever had been enormously reduced throughout the country since the passing of the Public Health Act of 1875, which led to the wide adoption of water methods including the water-closet. London was probably the city in which water-closets and water-carriage of sewage were most universal and the death-rate from enteric fever was less for London than that for the whole of England and Wales. On the other hand the mortality was highest in the counties of Nottingham, Lancashire, Durham, Northumberland, and part of Yorkshire—industrial centres where the water system least prevailed; and in industrial South Wales, where similar methods to those in Durham, &c., were adopted, the mortality was half as large again as in North Wales. The water-closet was not discovered by Bramah but was described by Vitruvius, and remains of one were found in the ruins of the Palace of the Cæsars in Rome. A full description, with illustration and specification, was found in the "Metamorphosis of Ajax," by Sir John Harrington, published in 1596; and the first patentee of the valve closet was Alexander Cummings in 1776. It was afterwards modified by Bramah and usually bears his name. Till lately it was believed that typhoid fever might arise *de novo* from decomposing excrement. But as he had shown in a paper read before the Epidemiological Society in 1874 this and other suitable conditions might be present for years and typhoid fever only break out when a fresh case was introduced from a distance. He quoted a case in which a maidservant developed typhoid fever when a sewer had been opened under her bedroom window. As no cases had occurred in the neighbourhood for some years it was supposed that this was due to infection from decomposing sewage but it was found that the sewer had been contaminated from a patient suffering from typhoid fever in a cottage six miles away. Although it was not generally held now that the disease could be transmitted by vitiated air he believed that this was sometimes the case. Sir William Gairdner had mentioned the case of the Prince of Wales as an instance in point. But on looking up the notes of his investigation made twenty-seven years ago he found that that view could not be adopted. Contrary to what was stated at the time there were no cesspools under the house in which the Prince was staying and the soil-pipe was efficiently ventilated. The fever attacked several of the gentlemen who were staying in the house at the same time and a few of the male servants, but the ladies and the female servants escaped. He believed that the vehicle of infection was some article of food. Dr. Corfield was satisfied that until lately in London one of the chief sources of propagation was the connexion of the waste-pipe from the water cistern with the soil-pipe which led to fouling of the water. It had been thought that the cistern could be dispensed with, but some storage was necessary and in the east-end of London where they had been taken out they were now being replaced. There were some curious differences to be observed in the spread of typhoid fever and cholera. As an instance he mentioned that in the town Lyons, which was a city of cesspools, typhoid fever was always prevalent; yet although cholera had been repeatedly introduced it had never spread, and this was so well recognised that the inhabitants of Marseilles and Paris hastened to Lyons for safety whenever an epidemic broke out in their own towns. He thought that the air of the houses became polluted from the cesspools beneath and so favoured the occurrence of typhoid fever.

Dr. SEATON referred to the reduction of 60 per cent. which had been effected in the mortality from typhoid fever. He thought that the fundamental point for the prevention of epidemics was the efficient organisation of the sanitary authorities—a point which he had discussed at length elsewhere.[1] Compulsory notification was one of the greatest safeguards and had proved to be a very great success in spite of the opposition and criticism to which it was subjected when first adopted. The sanitary authorities had greater responsibility in dealing with small-pox and typhoid fever than with other diseases. Disinfection, or if possible destruction, of all infectious material was most important for arresting the spread of the disease, and at Newcastle Dr. Armstrong was adapting the sterilisers which had proved so useful in disinfecting cholera-infected materials for use in the typhoid wards of the hospital. He hoped to see an amplification of the system of notification so that there should be inter-notification between sanitary authorities of adjacent districts. Such a system had been adopted by some county authorities, notably in Cornwall. He was strongly in sympathy with Dr. Poore's views so far as they applied to rural conditions, but he could not regard them as suitable for the immense aggregations of population in large towns. In France, where there was more frequently a plot of cultivated land surrounding the house, Dr. Poore's methods would be more easily applied than in this country. He thought that there were many rural districts supplied with elaborate water systems the sewage of which could be more safely, efficiently, and much more cheaply dealt with by dry methods.

Dr. J. E. SQUIRE reminded the society that twelve years ago he brought before them some observations with regard to the spread of typhoid fever among the British troops then on service in the Eastern Soudan. These showed that the disease spread in that hot, dry climate through the dust which was carried by the wind and which conveyed particles of dried excrement. Recent observations on the virulence of the typhoid bacillus after drying supported this view. Although in this country this mode of spread was not a likely one yet it deserved careful consideration in connexion with the spread of fever in hot countries in which it was prevalent such as India.

Dr. FLETCHER LITTLE made a series of recommendations for the avoidance of typhoid epidemics. 1. Universal notification, with compensation to any bread-winners who were prevented from following their occupation. 2. Arrangement by the local authorities for the performance of tests such as Widal's reaction free of expense to the medical practitioner. 3. Supervision of all public buildings such as barracks, docks, railway stations, and hospitals by the local medical officer of health. 4. The water-test should be insisted on before any drains were passed. 5. Municipal control of the water-supply, with right of access and inspection back to the source. 6. Inspection of the sources of the milk-supply. 7. All raw shell-fish should be regarded as "suspected." 8. All cases should be treated in hospital under the care of their own medical attendant. 9. The typhoid excreta should not be applied to the soil.

Dr. THEODORE WILLIAMS thought that during the discussion perhaps too little attention had been given to the vulnerability of the individual. He remarked that there was a distinct family proclivity to fall a victim to the disease and he was inclined to think that there was also a racial vulnerability, the Anglo-Saxon race being more prone to contract the malady than the Southern races. It was notorious, for example, that Englishmen were very apt to contract typhoid fever in some towns, such as Naples, at a time when there was very little among the natives. The immunity in some of the towns on the Mediterranean was astounding. He mentioned one town in which there were no drains and in which the excreta were deposited by each individual outside the city wall, leaving the disintegration to the birds, the dogs, and the flies, and yet typhoid fever was almost unknown.

Dr. HORTON SMITH referred to the long period after

[1] Transactions of the Sanitary Institute, October, 1897.

defervescence during which typhoid bacilli could be detected in the urine and fæces. If these excreta were not properly disinfected the disease might be spread through them. The bacilli had been found in the fæces twelve days after defervescence by Brieger, and forty-one days after by Lazarus, and he (Dr. Horton Smith) had found them in the urine twenty-two days after. He therefore urged careful disinfection of fæces and urine throughout convalescence. Even after the bacilli had disappeared from the urine and fæces they might remain in the bone marrow setting up chronic osteomyelitis, and in two cases they had been found at the time of operation in a cavity containing a sequestrum six years after the attack of fever. He thought it inadvisable to put typhoid excreta on the soil because the bacilli had been found by Lösener in soil from a ploughed field, and Martin and Robertson had shown that they could grow in soil. The dejecta should, if possible, be burnt and if not should be treated with strong antiseptics.

Mr. H. E. DURHAM said that much that had been written on the typhoid bacillus was untrustworthy because imperfect tests had been employed. The usual test to distinguish it from similar bacilli was the absence of evolution of gas when it was grown in culture media containing glucose. But there were several bacilli which could, like the typhoid bacilli, be cultivated at the ordinary temperature of the room on such media without evolution of gas. If the typhoid bacillus only be present there should be no evolution of gas when the tube is kept at the temperature of the body. Typhoid bacilli grew scantily in proteid-free media with formation of acid. The question of the identity of the typhoid bacillus might also be tested by Widal's test, but the serum of a typhoid fever patient had not a sufficiently high potency to be of value, and serum of high potency from an immunised animal must be employed. Mr. Durham did not consider Widal's test as usually applied of much value for clinical purposes.

Dr. CHILDS remarked that there were two methods of analysis, one chemical and bacteriological, which unfortunately was not usually adopted till the mischief was done, and secondly the physiological test by involuntary inoculation of the population. He considered that greater legal obligations ought to be laid on the water companies and that greater powers ought to be given to the local sanitary authorities who had now no power to inspect the sources of the supply if they lay in another district. There should also be a periodical inspection by an officer of the Local Government Board to see that supervision by the local authority was being actually carried out. He believed that we should yet see a great reduction in the frequency of this disease and thought that the reduction which had been effected in Munich, where it was formerly prevalent and where the mortality had now been reduced to a twentieth by improved sanitation, was an indication of what might be looked for.

Dr. SEYMOUR TAYLOR said that there were many clinical problems which required an answer. Dr. Williams had referred to family and racial susceptibility. He thought that an explanation was wanted of the escape of people for a long time although exposed to infection and then the sudden development of the disease. In London there was a regular seasonal increase in the number of cases in the early autumn which was unaccounted for. If the entrance of the bacilli were the only efficient factor it was difficult to understand how medical men and nurses, who must inhale bacilli from the stools and from the beds, rarely took the disease in this way. He mentioned some cases which he thought indicated that ordinary gastro-intestinal catarrh might prepare the way for infection. It was curious how often typhoid fever developed in new arrivals although those who had previously lived in the house for some time under the same conditions had escaped. Possibly the latter became immune from long exposure to the poison. Typhoid fever was supposed to be antagonistic to malaria.

Dr. POORE, in reply, said that he was unable to reply *seriatim* to the many points of interest which had been raised. With regard to the disposal of excreta on the soil some of those who differed from him had exaggerated what he had said. He had not advocated giving up water-closets in London or having recourse once more to surface wells. He had said that in order to prevent contamination of the water it was best to burn the stools, but that in the country it would be best to put the excreta near the top of a recently tilled humus. Merely digging a trench, filling it with excreta, and covering it firmly with soil simply preserved the fæces and did not lead to their disintegration. Surgeon-Major-General Jameson had drawn attention to the frequency of typhoid fever among the troops in India where dry methods were customary, but it must be remembered that in the tropics men had a raging thirst and would drink unsuitable water. Both Hindoos and Mussulmans often performed their ablutions in the tanks immediately after defecation. Although the mortality from typhoid fever was high among the troops in India and Bermuda it was very low in China, where the fæces were regularly collected and spread over the fields. The method of dealing with the excreta was not original. In Leviticus Moses compelled every man to carry a paddle and to withdraw outside the camp to get rid of his excreta, which he was then to cover lightly with soil. Much instruction in sanitary matters was needed by the officers who had to administer the Public Health Acts. With regard to the growth of the bacilli in soil he wished to point out that they had been shown to grow best in filthy soil—such as that of the middens in some of the northern industrial towns which had been referred to. The soil could only be properly cleansed by tillage and he considered that its productiveness was the best index of its purity. If the earth was as dangerous as had been maintained it was remarkable that farm labourers and market gardeners should be two of the healthiest classes in the country.

MEDICAL SOCIETY OF LONDON.

Discussion on Adherent Pericardium.

A MEETING of this society was held on Jan. 10th, the President, Dr. SANSOM, being in the chair.

Sir WILLIAM BROADBENT opened a discussion on Adherent Pericardium. He remarked that this condition often escaped recognition and an absolute diagnosis could rarely be made. Even total adhesion might not give rise to symptoms or signs provided that there were no outside adhesions of the pericardium to the chest wall. But while it might not give rise to shortness of breath on ordinary exertion it might hamper the right auricle and ventricle in cases of bronchitis or might hinder the hypertrophy of the left ventricle in Bright's disease, and again might aggravate the embarrassment of the heart in cases of valvular disease. Frequently there was nothing characteristic about the symptoms, which were merely those of embarrassment and dilatation of the heart and occurred in all forms of cardiac disease, such as irregularity and intermittence of the pulse and præcordial pain, frequently almost anginal in character. These would only be regarded as evidence of adherent pericardium when other causes had been eliminated. In one case the symptoms were peculiar; there was œdema of the legs, which subsided when the patient rested in bed but relapsed several times and then became permanent; there was never any evidence of back-pressure in the lungs or any pulsation in the neck. At the necropsy it was found that there was adherent pericardium which had almost obliterated the right auricle, completely closing the inferior vena cava. Sir William Broadbent mentioned several conditions of valvular disease in which the occurrence of adhesion of the pericardium would prevent compensation. The physical signs on which most weight should be placed were: (1) arrest of the normal respiratory movement seen in the epigastrium; (2) imperfect descent of the apex beat during inspiration; and (3) absence of shifting of the apex beat with changes in the position of the patient. None of these, however, necessarily implied adherent pericardium. Disappearance of the apex beat might be due to undue covering of the heart by the lung as well as to adherent pericardium. Dilatation and hypertrophy of the heart in the absence of valvular disease or of kidney disease were very suggestive of this condition, especially if the apex were outside the nipple line and did not shift with a deep inspiration and there was a diastolic tug at the apex. In some cases a sudden tug could be seen and felt over the left false ribs due to dragging on the diaphragm which might be so extensive as to suggest local pulsation. Similar tugging had been observed in cases of hypertrophy without adhesion. Pulsus paradoxus and pulsation of the veins had been described as frequent symptoms but he had rarely met with them. In one case there was apparent pulsation of a vein in front of the chest owing to the internal mammary artery being caught by adhesions so

that blood could only pass through it when the heart was in a state of systole.

Sir R. DOUGLAS-POWELL said that the cases should be divided into two groups, the first embracing those in which the inflammation was limited to the opposed surfaces of the pericardium, and the other those in which the external surface of the pericardium was adherent to the mediastinal tissues. Clinically he thought that the cases which gave rise to clear symptoms were those in which there was much thickening of the pericardium, which might sometimes be equivalent to a solid adhesion. In others there was no sign or group of signs or symptoms which enabled a diagnosis to be confidently made. The action of the heart must be impeded in working in a tough, fibrous, adherent casing, and in addition there was a loss of the normal pericardial lymph space which probably normally guards the heart against sudden congestions from strains and the like, fluid being poured out and the congestion relieved. In adherent pericardium, however, the passage of lymph must be interfered with, although anastomotic loops may be formed with branches of the internal mammary artery which tended to reduce heart congestions. He thought that the adhesions were usually secondary to chronic disease of the heart and valves and were analogous to the thickening of the capsule of the liver and kidneys in parenchymatous disease of those organs. He mentioned the case of a sailor who was known to have aortic regurgitation and who died after an attack of hæmoptysis and was found to have had unsuspected adherent pericardium. The hæmorrhages had probably resulted from pulmonary congestion from failure of the left ventricle. In another case, that of a girl, ten years of age, the signs were distinct. She had been ill for four months with inflammation of the pericardium and endocardium. There was a double mitral murmur and great hypertrophy with systolic depression of the first, second, and third intercostal spaces near the sternum and also a systolic depression of the fifth, sixth, and seventh intercostal spaces outside the left nipple line. The apex beat was long and thrusting and did not shift with respiration or change of position. Internal and external pericardial adhesion was found. He had not seen the retraction at the apex which was often described, the pulsus paradoxus was not present, and there was no epigastric pulsation. He agreed that the stress on the heart in these cases fell mostly on the right side which faces the unyielding anterior wall of the thorax.

Dr. JOHN BROADBENT remarked on the small proportion of cases which were recognised during life, although the condition was a common one. At St. Mary's Hospital, from 1890 to 1893, out of eighty-six cases in which death was attributed to heart disease the pericardium was adherent in no less than thirty-one, and at the Children's Hospital, Great Ormond-street from 1881 to 1892, out of 100 cases of fatal heart disease there was evidence of pericarditis in all but six. He had observed several cases in which pericarditis had developed in a subacute manner. One of the most striking features was the rapid dilatation of the heart, as Dr. Lees had pointed out. There was some degree of myocarditis accompanying the pericarditis, and on the degree of this depended the amount of recovery. Even when the inflammation subsided the heart became permanently fixed in its dilated condition, and it was in these cases that symptoms were manifested. Tight adhesions in a child might prevent development of the heart. Sometimes rapid dilatation of the heart developed in the first few days of pericarditis and he suggested that this was due to a muscular paresis analogous to that which occurred in the muscular coats of the intestine in peritonitis. He laid stress on enlargement of the heart without other explanation as indicative of adherent pericardium. Adherent pericardium should also be suspected when the symptoms were out of proportion to the signs of valvular disease. In the subacute form the persistence of the rub over a varying area for some days or weeks, permanent enlargement of the area of cardiac dulness, prolonged convalescence with pallor and shortness of breath on the least exertion, and relapses without obvious exciting cause were some of the indications which would point to the formation of adhesions. This sub-acute form was most frequent in children who exhibited many rheumatic nodules.

Dr. EWART regarded the simple bands of adhesion often limited to the apex of the heart as relatively unimportant, their length allowing considerable mobility. Universal adhesion of the pericardial membrane to the heart without thickening, a condition resulting from simple acute pericarditis, probably did not seriously hamper the cardiac movements. Even when this thin membrane was also adherent to its outer environment the heart was probably able to accommodate itself to the circumstances owing to the elasticity of the pulmonary tissue surrounding it. Greater difficulty would arise when the membrane was thickened by neoplastic deposits or by chronic mediastinopericarditis, and this would be much aggravated by any induration of the surrounding organs causing the heart to be bound down in a rigid bed. In connexion with the collateral subject of pericardial effusion Dr. Ewart had been glad to hear it stated by Sir William Broadbent that the old view that the apex of the heart was raised by the effusion had been given up. He agreed with Sir Richard Douglas-Powell in thinking that the fluid contents of the pericardium might be subject to considerable physiological variations in quantity and might act in a manner analogous to the fluid in the meninges in equalising pressures. This view received support from his own observations on the frequency of transient pericardial effusions which were often overlooked, though readily detected by careful percussion. Reverting to the effect of pericardial adhesions upon the heart he believed that stress was thrown chiefly upon the left heart. The right side of the heart was fixed by the superior and by the inferior vena cava in addition to its basic attachment to the pulmonary artery. Its anterior ventricular surface was in permanent contact with the rigid chest wall, and its inferior surface with the diaphragm; its auricular surface alone was in contact with the right lung, whilst posteriorly it faced the convexity of the vertebræ. On the contrary the left side of the heart presented no attachment except at the base and the greater part of the left ventricle was surrounded normally by yielding lung tissue which allowed it great freedom of movement. This would be much interfered with by the establishment of rigid adhesions, and those points on the ventricular surface would suffer most which normally possessed the greatest range of movement. The work of the left ventricle being normally greater the superadded struggle against adhesions might readily overtax its strength. Dr. Ewart regretted that Sir Wm. Broadbent had limited the scope of his important communication and not given the society his views on treatment.

Dr. SAMUEL WEST said that he did not know that there was any evidence that pericarditis ever completely cleared up, although the patient might not have any symptom. In many cases the diagnosis was only made because other explanation of the signs and symptoms was wanting. Systolic recession of the apex beat although conclusive was so rare as to be of little help. The adhesion might be most dense at the base, and might prevent falling back of the apex beat during the diastole. The fibrous tissue of the pericardium was directly continuous with the fibrous tissues outside the heart and with the intermuscular septa, and interstitial myocarditis could often be demonstrated. There was usually more dilatation than hypertrophy and apparent hypertrophy was often really fibrosis. He quoted a case similar to that cited by Sir William Broadbent in which the inferior vena cava had been completely obstructed by adherent pericardium. Dr. West remarked on the frequency of a latent form of pericarditis leading to adhesions in gout and in Bright's disease.

Dr. LEES said that in the cases of internal and external adhesion a diagnosis could often be made with a considerable degree of certainty, but it was difficult to prove that simple internal adhesion was detrimental to the action of the heart. In cases in which there was cardiac disease the effect of the adhesion was to fix and render permanent the dilatation which was part of the original inflammation of the heart. He had noticed a sudden dilatation of the heart in children and also in young adults during their first attack of acute rheumatism in which no rub or murmur could be detected, the dilatation returning to normal if the patient was kept at rest in bed till he was quite convalescent from the rheumatism. In one case this was observed in two successive attacks of rheumatism. If pericarditis occurred it would fix this dilatation and render it permanent. Gaskell had shown that soda contracted the heart and vessels while lactic acid caused dilatation. He thought that rheumatism was probably a microbic process and that a toxin was liberated which acted on the wall of the heart in the same way as lactic acid. A similar form of acute dilatation, probably toxic, was often observed in connexion with influenza and was occasionally fatal.

Sir WILLIAM BROADBENT, in reply, while expressing

acquiescence with most of the views which had been expressed, said that he could not agree with Dr. Ewart that the left ventricle was most impeded. Clinical observation showed clearly that it was the right, and he was unable to agree with what he had understood Dr. Ewart to say with regard to the normal movements of the heart.

OBSTETRICAL SOCIETY OF LONDON.

Adjourned Discussion on the Obstruction of Labour by Ovarian Tumours in the Pelvis.—Exhibition of Specimens.

A MEETING of this society was held on Jan 5th, Dr. C. J. CULLINGWORTH, President, being in the chair, when the adjourned discussion on Dr. McKerron's paper on the Obstruction of Labour by Ovarian Tumours in the Pelvis was resumed.

Dr. HERBERT SPENCER related a case of Ovariotomy during Labour which was obstructed by an ovarian dermoid incarcerated in the pelvis. In the case recorded the patient, aged twenty years, had had one dead child previously without difficulty; with the second child the labour was obstructed by an ovarian dermoid weighing sixteen ounces, incarcerated in the pelvis. As the tumour could not be pushed up laparotomy was performed, the uterus was withdrawn from the abdomen, the tumour was removed, and the child delivered by forceps applied in the dorsal position. Mother and child recovered. In the treatment of ovarian tumour obstructing labour Dr. Spencer thinks that the tumour should be pushed out of the pelvis if possible, but discards version, forceps, craniotomy, and simple incision or tapping of the tumour on account of their danger. Cæsarean section will be very rarely necessary if the uterus be withdrawn from the abdomen. Dr. Spencer discussed the merits of vaginal and abdominal ovariotomy and considered that on the whole the latter is the preferable operation.

Dr. HERBERT SPENCER also showed an Ovarian Dermoid Tumour which, becoming incarcerated in the pelvis, obstructed labour. The tumour was pushed up out of the pelvis under chloroform, the child delivered by forceps and ovariotomy performed seven months later. Mother and child recovered. A skiagram of the tumour was also exhibited.

Dr. ROBERT BOXALL exhibited a Tumour (Dermoid) of the Ovary occurring in a case in which Cæsarean section was performed at the end of the first stage of labour and the tumour removed. Both mother and child recovered.

Dr. HERMAN said that this paper was the fullest account of the complication of labour with ovarian tumour that had yet been given. He agreed in the main with Dr. McKerron's advice. But there was one method of treatment, the credit of which he believed had been given to Fritsch, which he thought deserved fuller consideration and commendation than Dr. McKerron had given to it—viz., the making an incision into the cyst through the vagina and stitching the opening in the cyst to the margins of the vaginal incision. In this way the emptying of the cyst contents outside the peritoneum was secured. If the cyst were a dermoid, as many of the cysts which obstructed labour were, simple tapping was attended with much danger of the cyst contents escaping into the peritoneal cavity. Of forty-three cases in Dr. McKerron's paper treated by tapping or incision twenty-four died. This danger was avoided by Fritsch's procedure. He (Dr. Herman) did not advise this for tumours that could be pushed up or for those which came under the care of experienced operators in circumstances suitable for the performance of ovariotomy. Many of these cases occurred in the practice of accoucheurs having little or no experience in ovariotomy.

Dr. PLAYFAIR said that twenty years had elapsed since he had communicated to the society the paper he had himself written on this subject. In that he had collected 35 cases which Dr. McKerron had incorporated with his own. He had tabulated the details of 126 more, making 183 in all. This conclusively showed that this serious complication of labour was by no means so rare as might be anticipated. It was a curious and important fact that the existence of ovarian tumours was only suspected in 18 per cent. of the cases before labour. Of course, if they did diagnose it during pregnancy it was now an admitted rule of practice that ovariotomy should be performed without delay, but unhappily the figures showed that this was only exceptionally possible. The explanation of this was probably that only very small and freely mobile tumours could engage in the pelvis and become impacted in front of the presenting part. He did not doubt that when it was feasible the best and safest practice was to remove the tumour either by abdominal or vaginal ovariotomy. The reason why he had not recommended this in his former paper was obviously because ovariotomy twenty years ago was on an entirely different footing from the operation in the present day. Then antiseptic precautions were unknown or in their infancy and laparotomy was a much more serious business than it is now. To do it during the actual progress of labour was a procedure that had never been considered a possibility. He related a case in which induction of labour was performed in preference to laparotomy with unhappily a fatal issue. While admitting that ovariotomy was the best course he felt that there must always be cases where it could not be judiciously practised. It was obvious that this plan required experience in operating and suitable surroundings in nursing. He did not envy the practitioner who had no experience in abdominal surgery if suddenly called on to perform such an operation. It behoved them, therefore, when ovariotomy was not feasible to decide what was the next best course to pursue. Obviously the one thing which should not be done was to leave the case alone in the hope that the fœtus might be pushed or drawn past the obstructing tumour. Dr. McKerron showed that in all such cases the mortality is 50 per cent. In his (Dr. Playfair's) paper he had recommended vaginal puncture of the tumour so that its size should be lessened as much as possible. When this had been done the results had been much more satisfactory, the mortality having been only 18 per cent.

Dr. HEYWOOD SMITH remarked that in 1884 he saw a single woman, aged twenty-four years, who had a small ovarian tumour behind and to the right of the uterus. She married and became pregnant; during the pregnancy he several times pushed the tumour above the uterus. During labour the tumour came down in front of the head obstructing delivery. He aspirated the cyst and the child was born alive. She again became pregnant and he performed ovariotomy during the third month and the patient was delivered of a full-sized child.

Dr. HORROCKS thought the paper valuable, but the statistics of cases quoted were historically interesting rather than having any bearing upon modern treatment; because the fact that in these days of aseptic operations one could open the abdomen without ill-effects rendered the question of what to do in cases of tumours obstructing labour capable of being answered quite differently. Twenty years ago and less it would have been wrong to perform laparotomy in such cases because the operation itself would have been fatal in the majority of cases from sepsis. He failed to see why Cæsarean section was performed in Dr. Boxall's case; the method adopted by Dr. Spencer was more scientific and better in every way for the patient. With regard to the question of vaginal *versus* abdominal operations he certainly thought the latter was preferable, because even in the non-pregnant state vaginal ovariotomy was often most difficult and perplexing, and when pregnancy complicated it all the vessels became enlarged and hence the hæmorrhage might easily become alarming, when it would be difficult and perhaps impossible to catch the bleeding points from the vagina.

Dr. SPENCER was glad to find a general agreement that the best treatment of incarcerated ovarian tumours which could not be pushed up was ovariotomy. Cæsarean section inflicted an injury on the patient which in ordinary cases was quite unnecessary, though it had been recommended in this society as recently as 1892. He thought the opinion of the society should go forth that ovariotomy was the proper treatment when practicable.

The PRESIDENT said that it was greatly to be regretted that Dr. McKerron had not been able to be present at the adjourned discussion. He agreed with Dr. Horrocks that in drawing conclusions from past experience it was necessary to have continually in mind the very different conditions under which operations were performed before and since the introduction of antiseptics. As a large proportion of the ovarian tumours that had been met with as obstructions to delivery had proved to be dermoids it seemed doubtful whether tapping would always succeed in effecting such a diminution in size as would suffice to overcome the obstruction. Undoubtedly the ideal treatment was the removal of the tumour there and then by abdominal section. Where

this was impracticable the proper course, if the tumour could not be pushed out of the way, was to endeavour to deal with it temporarily by tapping or incision per vaginam and to perform ovariotomy as soon as possible after the labour was over. He did not think the alternative of Cæsarean section was to be commended. He concluded by referring to a case he had published in the St. Thomas's Hospital Reports for 1887, p. 143, in which abdominal section had been performed on a patient nineteen weeks after delivery for the removal of a dermoid tumour of the ovary that had caused serious obstruction to delivery and that had subsequently undergone suppuration and discharge per vaginam through a rent in the posterior wall of the cervical canal.

The following specimens were exhibited:—

Dr. MCCANN: (1) Malignant Adenoma of the Cervix with Microscopical Slides; and (2) Uterine Fibroids.

Dr. JOHN PHILLIPS: The Placenta from a Full Term Extra-Uterine Fœtation, the child being dead and removed by abdominal section five months later, the patient doing well on the seventh day.

Dr. REMFRY: Hydrocele of the Canal of Nuck.

The PRESIDENT: Malignant Growth of (?) Fallopian Tube.

HARVEIAN SOCIETY OF LONDON.

The Pathology and Treatment of Gout.

A MEETING of this society was held on Jan. 6th, the President, Dr. MILSON, being in the chair.

Dr. A. P. LUFF read a paper on the Pathology and Treatment of Gout which is published *in extenso* at p. 147.

Dr. EWART in the course of the discussion dwelt upon the value of the suggestions contained in the paper and upon the clearness with which Dr. Luff had stated his views as to the chemistry of gout. Apart from the question as to any detrimental action of common salt the suggestion as to the use of an artificial table salt was a happy one. Dr. Luff's observations on the properties of the ash of vegetables had a practical bearing upon the general question of diet. They lent support to a largely vegetarian rather than to an exclusively meat treatment. The soundness of this view was not necessarily disproved by the well-known fact that an acute attack had occasionally been induced by an abrupt change to a strictly vegetarian diet. The chemical theory which had been propounded was plausible and complete so far as it went. But whilst it professed to explain how uric acid might be accumulated it failed to show why the kidney should take on abnormal action. The antecedents of gout remained mysterious and needed elucidation.

Mr. WM. ARMSTRONG (Buxton) expressed his appreciation of the very lucid manner in which Dr. Luff had put before the society so complicated a subject. He had been much impressed in a considerable number of cases by the great increase in the persistency and gravity of gouty symptoms when even slightly defective kidney action was present. He felt sure that the state of the nervous system had much to do with the genesis of gout. Nerve strain and disturbance without doubt greatly affected the deeper and more subtle digestive processes and favoured the occurrence of fermentation and consequent auto-poisoning, and many of those cases of irregular gout now so common came on in persons whose general nerve tone had become distinctly lowered. This had a very considerable bearing upon the questions both of dietary and treatment and was a strong argument in favour of Dr. Luff's view that it was impossible to indicate one general treatment for all gouty cases, but that each should be treated as a unit and dealt with according to the special indications present. With regard to the taking of common salt he had been noting its effects by means of quantitative determination of the uric acid for some time past but had not been able to satisfy himself that it was harmful; still, Dr. Luff's suggestion that a table salt should be prepared from the salts of vegetables ought not to be lost sight of. One of the most valuable means of keeping the gouty tendency in check was no doubt the drinking of hot water in the morning fasting and at bedtime, as was also the taking of a single grain of calomel, followed by a saline aperient, once a week. With regard to dietary, while favourable to the use of vegetable foods, he could not shut his eyes to the fact that vegetables were ill-digested by many of the gouty and therefore prescribed them very largely in the form of purées with excellent results. In old-standing cases or where the patient was much debilitated beef or mutton might be freely given, but it was then absolutely necessary that the hot-water drinking should be strictly carried out and that carbohydrates should be cut down as much as possible. Bread should be taken either twice baked or at least cut very thin and thoroughly torrefied. In some of the most refractory cases of chronic gout surprising results had been achieved by the "Salisbury" treatment, which consists in giving only beef or mutton, the whites of eggs, and considerable quantities of hot water. This method is one which should only be carried out under careful medical supervision, but is well worthy of attention in obstinate cases. With regard to alcohol he had found that many gouty people could never get rid of their ailments so long as they drank whisky, while their symptoms at once abated when that spirit was abandoned. Probably Dr. Luff's theory that in many of these cases the kidneys were in a more or less abnormal condition would account for this fact. In some cases of atonic and so-called neurotic gout patients were greatly benefited by taking a little sugar-free champagne or a glass of port-wine (thoroughly matured in the wood) with meals, but still Moselle diluted with sufficient alkaline water to neutralise its acidity was probably the least harmful form of alcohol.

Dr. HUBBARD asked Dr. Luff if he had any experience as to the value of lysidin, a German preparation of somewhat recent introduction described as a powerful solvent of uric acid. He (Dr. Hubbard) had used it in three or four severe conditions of gout and was under the impression it was useful.

The PRESIDENT asked whether such large doses as from 30 to 40 minims of vinum colchici were given in cases where cardiac lesions existed. He thought that saline aperients with a pill containing blue-pill and colchicum each night would be safer.

Dr. CALEY spoke of high arterial tension in cases of chronic gout where there was no evidence of renal disease. He thought that this pointed to some toxæmic agency. Though there was evidently a close connexion between gout and granular kidney it had not been made clear that the latter was the primary change.

Dr. LUFF in reply said that he had never known full doses of vinum colchici to disagree even with the subjects of cardiac disease, but where there was reason to suspect advanced fatty degeneration of the heart smaller doses would be indicated. He had tried lysidin but had been unable to ascribe to it any good effect.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.

Nephrectomy associated with Pregnancy.—Diseases of the Sinuses adjacent to the Nasal Cavity.

A MEETING of this society was held on Jan. 7th, Dr. THUDICHUM, Vice-President, being in the chair.

Mr. G. E. TWYNAM read a paper on Nephrectomy and its Relation to Pregnancy. He had had under his care three cases bearing on the subject and had examined the literature of the same and had found a record of six other cases. After referring to the notes of his three cases—two being pregnancies which went to full term after nephrectomies had been performed for severe lesions of the urinary tracts, and the third one in which the kidney was removed at the third month of pregnancy—Mr. Twynam discussed the effect of the loss of one kidney, firstly upon the pregnant and parturient woman, and secondly upon the development of her offspring. The conclusions which his observations had led him to come to he summarised to be (1) that a fatal result has not been recorded in consequence of the pregnancy following nephrectomy; (2) that slight albuminuria may occur during the gestation; (3) that the nephrectomy wound may have a tendency to allow the formation of a ventral hernia during delivery; (4) that the liquor amnii is not excessive in amount; (5) that no marked œdema occurs; (6) that morning vomiting tends to be severe; (7) that eclampsia or uræmia has not been present; (8) that some irregularity of the pulse may occur after delivery for a short time; (9) that all the children born were well-developed and healthy; and (10) that in every case the mother was able to suckle her child. Hence Mr. Twynam believes it may be

fairly concluded that women can after a nephrectomy bear children without very great danger to themselves or their offspring provided the remaining kidney and their other organs are healthy.—Dr. AMAND ROUTH congratulated Mr. Twynam on his valuable paper. He referred to two cases bearing on the subject and gave it as his opinion that in all the cases quoted there had been chronic disease of the kidney which had been removed and so the other kidney had assumed compensatory work. He would like to know what would be the effect of the removal of a healthy working kidney in a pregnant woman.—Mr. SWINFORD EDWARDS had had a case in a male subject where for laceration he had removed one kidney, thus throwing all the work suddenly on the opposite organ. The result was that in four days' time both the amount of urine and urea were normal. — Mr. TWYNAM replied.

Dr. THUDICHUM read an abstract of a paper on Inflammation, Abscess, and New Growths in the Cavities adjoining the Nasal Cavities and their Operative Treatment. Ethmoidal abscess, he averred, might be due to tubercle, syphilis, septic inflammation and injury. It was often confounded with, and mistaken for, abscess in the maxillary sinus. When the ethmoidal abscess was found in the anterior part of the ethmoid it usually presented as a swelling at the inner canthus of the eye. The proper treatment of such cases was to make a free opening from the nose and not to open them externally if it could be avoided, on account of the great liability there was of a permanent sinus remaining as a result. In abscess of the maxillary sinus he advised that the opening should be always made through the nose and not through the alveolar process of the maxilla. In discussing the treatment of polypi he considered free removal of a great part of the ethmoid bone essential. Tuberculosis of the nasal cavity was often a starting point of lupus of the face. He believed that tuberculin was of no permanent good in such cases.—Dr. ALDERSON thanked Dr. Thudichum for his most valuable paper. He had had but few cases in many years of suppuration in the sinuses. He believed that the swelling caused by an ethmoidal abscess was always smaller than that produced by an abscess of the maxillary sinus.—Dr. J. B. BALL considered Dr. Thudichum's plans of treatment were original, vigorous, and effective. He doubted, however, the advisability of active treatment in latent inflammatory affections of the sinuses, since if symptoms were not distressing operative procedure might cause more harm than good. He did not agree that the maxillary sinus should not be opened through the alveolar border, but in every case the opening should be such as to allow free access for syringing out the cavity by the patient himself.

LIVERPOOL MEDICAL INSTITUTION.

Mules's Operation.—Acute Bright's Disease.—New Tuberculin in Lupus.—Bladder Growths discovered by the Cystoscope.—Traumatic Insanity.

A MEETING of this society was held on Jan. 6th, Dr. RICHARD CATON, President, being in the chair.

Mr. BICKERTON showed two men on whom Mules's Operation had been performed six weeks previously. A silver ball was inserted in one case, a glass ball in the other. The chief point of interest was that in both the sclerotic and conjunctiva were sutured together, the resulting cicatrix being firm with conjunctival granulations which were subsequently snipped off. Movement of the resulting stump in each case was very good.

Dr. CARTER read notes of two cases of Acute Bright's Disease which had developed severe symptoms after being exposed to wet and cold. In the first case a girl had convulsions and became comatose with congested face and stertorous breathing. The urine contained one-third albumin. Under inhalations of oxygen the amount of urine increased, the albumin diminished, and the percentage of urea rose. The convulsive attacks became less frequent immediately and soon ceased. The patient recovered. In the second case there were general œdema, headache, one-half albumin in the urine, but no convulsions occurred. This patient recovered under treatment with jaborandi.—Dr. MACALISTER, Dr. BARR, and the PRESIDENT made some remarks.

Dr. G. STOPFORD TAYLOR read notes of cases of Lupus in which he had used the new Tuberculin and showed three patients suffering from lupus vulgaris all of whom had benefited considerably by inoculations with this substance. He thought that the cost of the remedy would prevent its being extensively used.—Dr. LESLIE ROBERTS, Dr. BUCHANAN, and Dr. ABRAM discussed the cases.

Mr. THELWALL THOMAS related two cases of Bladder Growth diagnosed by means of the Cystoscope. The first case was a simple papilloma in the bladder of a man, aged thirty-eight years, who for six months had suffered from hæmaturia. The growth, which was pedunculated, was situated to the right of the orifice of the right ureter: suprapubic cystotomy was performed and the growth removed. The second patient was a woman, aged forty-two years, who had an ulcer surrounded by papillomatous fringes to the left of the orifice of the left ureter. The urethra was dilated and the growths were cut away with scissors. In the after history of both cases there was no pain or hæmaturia.—Mr. LARKIN, Dr. KENNAN, and Mr. DAMER HARRISSON made some remarks.

Mr. DAMER HARRISSON read a note on Traumatic Insanity and related some cases where insanity had been entirely relieved by the operation of trephining.—Dr. NATHAN RAW, Mr. C. G. LEE, Mr. RUSHTON PARKER, Dr. GLYNN, and Dr. BARR took part in the discussion.

Reviews and Notices of Books.

A Text-book of Special Pathological Anatomy. By ERNST ZIEGLER, Professor of Pathology in the University of Freiburg. Translated and edited from the Eighth German Edition by DONALD MACALISTER, M.A., M.D. Cantab., Linacre Lecturer of Physic and Tutor of St. John's College, Cambridge, and HENRY W. CATTELL, M.A., M.D., Demonstrator of Morbid Anatomy in the University of Pennsylvania. Sections IX. to XV. New York: The Macmillan Company. London: Macmillan and Co., Ltd. 1897. Price 17*s.* net.

WITH the issue of this volume the English-reading student has now the opportunity of perusing that portion of Professor Ziegler's deservedly popular text-book which deals with Special Pathological Anatomy. The translators, Dr. D. MacAlister and Dr. Cattell, are to be congratulated on the completion of this part of their labours, for we presume that they will also undertake the reproduction of the much-extended and revised volume of General Pathological Anatomy. The present instalment contains sections upon Diseases of the Digestive, Respiratory, Renal, and Generative Organs, together with one on Diseases of the Eye by Professor Haab, of Zurich, and one on Diseases of the Ear, by Professor Wagenhäuser, of Tübingen. The book is eminently suited for the student, since it is comprehensive without being diffuse, and its facts are marshalled in a systematic manner. The illustrations too are clear and for the most part artistic, although we notice with regret a few that have been recently introduced which do not come up to the standard for which Professor Ziegler's book has hitherto been famous. But if of value to the student it is no less useful for the practised pathologist, to whom the bibliographies appended to each chapter cannot fail to be of much service. We consider the sections dealing with pulmonary and renal diseases to be the best in the book, partly because of the admirable manner in which the somewhat intricate series of morbid changes in these organs is analysed and illustrated and partly because of the accuracy with which these lesions are described. Thus nothing can be better than the expositions of the forms of bronchopneumonia and of the part played by inhalation of foreign or septic material in their inception; nor have we anywhere so excellent and clear a description of the modes whereby tuberculous infection involves the lungs and the dangers that ensue from it. So, again, as regards the kidney, the differentiation of the types of acute renal

degeneration and acute hæmatogenous nephritis shows a thorough and minute acquaintance with renal pathology and throws considerable light upon the inflammatory changes in these organs. The discrimination of the arterio-sclerotic contracted kidney from the granular kidney of chronic interstitial nephritis which is admittedly difficult has much to justify it and a study of the excellent histological drawings which are here presented enables the reader to seize the points of difference emphasised by Professor Ziegler. We observe that he regards the two forms of hepatic cirrhosis—atrophic and hypertrophic—as closely allied in origin and as probably both commencing with primary degeneration of the hepatic cells. In respect to the etiology of the round ulcer of the stomach we find that Professor Ziegler adheres to the opinion of its dependence upon the solvent action of the gastric juice upon mucous membrane which is devitalised, whether by local ischæmia from disturbance of the circulation or by actual mechanical or chemical injury. We cannot find that he alludes to Dr. Soltau Fenwick's alternative—namely, the origin of ulcer in the solitary glands of the stomach, although in the bibliography reference is made to that observer's paper in the *Journal of Pathology and Bacteriology*. Indeed, in more than one section is it possible to find reference to recent writings the results of which are not embodied in the text; for instance, appendicitis is attributed mainly to the impaction of foreign bodies in the appendix, a view which is surely now obsolete. In the main, however, the work is well abreast of modern inquiry and having long occupied a foremost position amongst pathological text-books we do not doubt that it will maintain it and that the excellent translation which is here presented will enable it to become a favourite text-book in English medical schools.

Diseases of the Gall-bladder and Bile-ducts. By A. W. MAYO ROBSON, F.R.C.S. Eng., Member of Council and Hunterian Professor of Surgery and Pathology, Royal College of Surgeons of England; Senior Surgeon to the General Infirmary at Leeds; Professor of Surgery in the Yorkshire College of the Victoria University, &c. London: Baillière, Tindall, and Cox. Pp. 177. 1897. Price 7*s.* 6*d.*

EXACTLY twenty years have elapsed since the first successful case of opening the gall-bladder for the removal of an impacted calculus, though the operation had been suggested previously by Handfield-Jones and Marion Sims had had a fatal case. Before this it could hardly be said that any surgery of the gall-bladder existed, but this organ with its associated ducts has shared in the general advance in abdominal surgery. In 1897 Mr. Mayo Robson delivered some lectures at the Royal College of Surgeons of England on the subject of the diseases of the gall-bladder and bile-ducts and everyone who had the opportunity of hearing them or of reading the abstract which appeared at the time in THE LANCET must have appreciated their value and importance, and their appearance in their present form will be very welcome to many. It would be impossible to find anyone better qualified to speak with authority on this branch of surgery than Mr. Robson and every page is full of the practical experience of the author.

The volume is divided into five chapters and the first deals with the anatomical relations of the parts especially treating of the anatomical variations which are of importance from a surgical point of view. The second chapter treats of the inflammatory affections and in this connexion it is of great interest to note that normal bile is generally sterile. As to its supposed antiseptic properties there is very little proof that it has any power to prevent the growth of micro-organisms and the fact that it does not decompose readily is to be attributed chiefly to its poverty in nourishing materials. It has been repeatedly shown that ligature of the common bile-duct leads to the presence of organisms in the bile, a fact of value in the etiology of cholecystitis. A short chapter follows on intestinal obstruction produced by gall-stones. Chapter IV. deals with the tumours which may affect these parts; and the last chapter is concerned with the surgical treatment of gall-stones. This is the most important chapter in the book and is a notable contribution to the literature of the subject. The technique of the various operations described is carefully explained and the arguments in favour of the different methods of treatment are fully discussed. A very valuable table is given of all the operations on the gall-bladder and bile-ducts performed by Mr. Mayo Robson with the result and after-history in each case. Altogether there are 170 cases, and Mr. Robson is very fortunate in being able to say that he has never lost a patient after any operation for gall-stones in the absence of malignant disease, deep jaundice, or infective cholangitis. This branch of surgery is remarkable for the length of the names applied to the operations, such as cholecystotomy and cholecystectomy. It is a pity that simpler names cannot be devised; and is there any real need for such a decasyllabic monstrosity as "choledochoduodenostomy"? Of the fifty illustrations the majority are satisfactory reproductions of photographs of the museum preparations which were exhibited at the lectures at the Royal College of Surgeons of England. We cannot but regret the absence of an index.

Selected Essays and Monographs. London: New Sydenham Society. 1897.

THIS volume of "Translations and Reprints from Various Sources" forms an excellent addition to the valuable selection of works issued by the New Sydenham Society. The contents are varied and the choice has been made with judgment. The first essay in the volume is that on Syringomyelia, by Dr. Isaac Bruhl, of Paris, which has been translated and annotated by Dr. James Galloway and Dr. Lindley Scott. This monograph is well known as comprising one of the most detailed and accurate accounts of a condition of which the symptomatology is especially marked by sensory and trophic disturbances and at the same time so well defined as to admit of clinical diagnosis. Dr. Bruhl established the fact of the frequent association of this affection with a central "gliomatosis" of the spinal cord, whilst his more recent opinions upon the relation of Morvan's disease to syringomyelia are cited by the translators and show that Dr. Bruhl is more inclined to a belief in the dependence of the two affections on similar pathological lesions than he was in 1890 when this monograph appeared. The translators have also appended some important extracts from the more recent work of Schlesinger especially referring to the cutaneous and ocular affections that may be met with in syringomyelia. A case of Cerebro-spinal Syphilis with an Unusual Lesion in the Spinal Cord by Dr. H. M. Thomas is reprinted from the Bulletin of the Johns Hopkins Hospital. The symptoms began with intense headache, paralysis of the right sixth cranial nerve, later paralysis of the left fourth and then of the left third nerves, weakness of the right side of the body with sensory changes, and ultimately death by coma. In addition to other visceral lesions gummata were found on several cranial nerves and on the anterior roots of the third cervical nerves; there were also spinal meningitis and poliomyelitis of the lumbar enlargement. This last-named change, perhaps unique in spinal syphilis, was attributed by Dr. Thomas to a somewhat extensive hyaline degeneration of the walls of the small vessels of the cord. Then follow two essays on Pemphigus Vegetans, translated by Dr. F. H. Barendt; the one is by Professor H. Köbner, of Berlin, and consists of descriptions

with comments of three cases of this fatal affection together with remarks on the differential diagnosis of Bullous Eruptions of the Skin and Mucosa from Syphilis; the other, by Professor J. Neumann, of Vienna, details nine cases and insists on the importance of recognising the independent, non-syphilitic character of the disease. The subject of Yaws is treated in an essay by Dr. James Maxwell, of Jamaica, for which he received a gold medal from the University of Edinburgh. The distinction of this affection from syphilis is argued and the question of its relationship with leprosy discussed. Some excellent coloured drawings accompany the essay. The same subject is dealt with in an Epitome of Dr. A. Nicholls' Report on Yaws compared with British Guiana and Fiji Experiences by Mr. J. S. Wallbridge and Mr. C. W. Daniels. Syphilis is unknown amongst the Fijian natives. Two other essays are given on this subject, one by Professor Achilles Breda, of Padua, entitled a Contribution to the Clinical and Bacteriological Study of the Brazilian Framboesia or "Boubas," the other by Dr. M. Charlouis, of Java, on Polypapilloma Tropicum (Framboesia). These are both translated by Dr. A. E. Garrod. The writers in each instance conclude that the affection has nothing to do with syphilis, but Dr. Charlouis points out that mercury and iodide of potassium have a distinct therapeutic value. Other papers in the volume are on the Visceral Complications of Erythema Exudativum Multiforme, by Dr. W. Osler; on Sleep in its Relations to Diseases of the Skin, by Dr. C. Duncan Bulkley; a Remarkable Case of Purpuric Eruption ending in Gangrene, apparently Caused by Sodium Salicylate, by Dr. F. J. Shepherd; and two papers by Professor A. Fournier, of Paris, translated by Dr. Guthrie Rankin, their subjects being Syphilis and General Paralysis, and Parasyphilitic Epilepsy. A short paper on the Relation between Treatment in the Early Stage and Tertiary Syphilis, by Professor Neisser, concludes the collection. The volume thus contains chiefly subjects of dermatological and syphilographic character and is perhaps most to be valued by reason of the opportunity it affords to the English reader of the study of the characters of a tropical malady the nature of which has often been debated.

Nettleship's Diseases of the Eye: a Manual for Students. Revised and Edited by W. T. HOLMES SPICER, M.A., M.B. Cantab., F.R.C.S. Eng., Ophthalmic Surgeon to the Metropolitan Hospital and to the Victoria Hospital for Children. Sixth Edition. London: J. & A. Churchill. 1897. Pp. 465. Price 8*s.* 6*d.*

SEVEN years have elapsed since the appearance of the last edition of this well-known manual which, like the present, was revised and edited by Mr. Holmes Spicer. The work being one which was originally designed for students and which therefore dealt with the more common forms of disease, with the more characteristic symptoms, and with the broad principles of treatment it was not to be expected that any material alteration should be made in it. Nevertheless, careful examination has convinced us that Mr. Spicer has taken great pains with the volume as it now stands. By the adoption of a larger page and better type he has made it much more pleasant to read; some new figures have been introduced, of which the two that represent syphilitic and plastic iritis are exceedingly well executed; the descriptions of operations have been simplified and rendered more intelligible; statements that have not been sanctioned by more mature experience have been omitted; new facts founded on observations have been added and minor corrections made upon almost every page, so that the book may be regarded as well and thoroughly representing the present state of ophthalmic knowledge and as constituting a work that will be useful alike to the student and the practitioner. The only omission of any importance which we have noted has been that of reference to the Roentgen rays, which have on several occasions since their discovery proved serviceable in locating fragments of metal and led to the preservation of eyes that would otherwise have been sacrificed.

LIBRARY TABLE.

Guy's Hospital Gazette.—The issue of this paper for Jan. 8th devotes a good deal of its space to Christmas festivities at Guy's Hospital. The decoration of the wards reflected great credit upon those responsible for it, as the illustrations from photographs show. From the article headed "1897" we are glad to note that: "It is this that above all marks for us the close of the last year—the prospect, for the last twenty years a purely visionary prospect, of the whole of the hospital being restored to full activity with all necessary improvements and a standing balance to boot at the banker's. Indeed, the treasurer declares that it is the first time within the memory of man that the hospital has ended the year with a balance standing to its account on the credit side."

The M'Ewan Hall. Edinburgh: *Student* Office, Darien Press, Bristo-place. 1897. Pp. 30, and 24 full-page Plates.—This handsome book, nearly one-half of which consists of full-page reproductions of photographs, gives a good idea of the splendid building which the University of Edinburgh owes to the munificence of Mr. William M'Ewan, M.P. for Central Edinburgh. The opening of the hall was described by our Edinburgh Correspondent in THE LANCET of Dec. 11th, 1897, p. 1562, this ceremony being the completion of an important extension of the University buildings which had for many years been recognised as inevitable, and for which the first actual preparations were made in 1872. The extension originally contemplated an outlay of about £230,000 on a university hall and new buildings for the medical school; for financial reasons the part relating to the hall was not proceeded with, but the educational buildings were completed in 1885. In 1886 Mr. M'Ewan intimated that he was prepared to contribute £40,000 towards the erection of a university hall and, as it subsequently appeared that a building larger and more ornate than the one at first designed would harmonise better with the existing structures, he ultimately undertook the full cost (about £115,000) of the present hall which the university has caused to be named after him and which will under certain conditions be available for use by the municipal corporation of the city on public occasions. The plan of the hall is based on the form of the ancient Greek theatre, this form being chosen as best suited for an auditorium and one likely to ensure good acoustic results. The hall will accommodate nearly 3000 people. The internal diameter is 106 feet, the height to the dome light is 90 feet, and the total height from the street level to the top of the lantern is 130 feet. The preparation and execution of the book reflect much credit on the conductors of the *Student*, a university magazine. Mr. M'Ewan's portrait forms an appropriate frontispiece.

On Induction and its Association with the History and Progress of Medicine. By W. F. CLEVELAND, M.D. St. And. London: Baillière, Tindall, and Cox. 1897.—This little book is a reprint of the Harveian Lectures delivered before the Harveian Society in December, 1896. The choice of subject is very fitting for if ever there was a man who used the inductive method of reasoning rightly and with success that man was Harvey. Dr. Cleveland, after giving a plain and simple account of the inductive method as compared with the deductive, traces the course of medical science beginning with Hippocrates down to the present time. The first two lectures are a periscope

of medicine while the last is devoted to a record of illustrative cases showing the value of the inductive method, cases which are very interesting and deal with the most varied subjects.

Verhandlungen des Congresses für Innere Medicin. Fünfzehnter Congress, Juni, 1897. (*Transactions of the Congress of Internal Medicine.* Fifteenth Meeting, June 9th to 12th, 1897.) Wiesbaden: J. F. Bergmann. Glasgow: F. Bauermeister.—One of the most interesting medical congresses is that on "Internal Medicine" which is held annually in Germany—at Wiesbaden usually, but occasionally in other centres. Last year it took place at Berlin under the presidency of Professor Leyden whose opening address dealt with modern therapeutic tendencies. The special subjects for discussion were: (1) Chronic Articular Rheumatism and its Treatment, which was contributed to by Dr. C. Baumler, Dr. A. Ott, Dr. F. Chvostek, Dr. P. Singer, Dr. M. Schüller, Dr. Davidsohn, and others; (2) Epilepsy, opened by Dr. H. Unverricht; and (3) Morbus Basedowii, opened by Dr. Eulenberg. The Transactions contain full reports of these debates and a large number of papers read at the Congress, including such subjects as the Roentgen rays in diagnosis, lumbar puncture, treatment of chronic heart disease, acute leukæmia, leucocytosis in childhood, fatty degeneration, the gastric function, icterus, &c. The volume is one to be referred to by all interested in scientific medicine.

The German Nature Cure and How to Practise It. By I. AIDALL. London: Nicholls and Co. Price 3*s.* 6*d.*—This book contains a certain amount of sense and a great deal of nonsense. Cleanliness, air and sunlight are, as everyone knows, most valuable adjuncts in the treatment of disease, but they are not everything. On page 18 we learn that "vaccination ..... occasions the fearful spread of that terror of families—diphtheria." On page 224 an account is given of Herr Louis Kuhne's system of diagnosis which consists in examining the head and neck only. If a patient suffers from a "side encumbrance" we are told that "foreign matter presses into the lungs from above which is why the tips of the lungs are always first affected." We should like to know if Herr Kuhne has ever seen a case of pneumonia.

JOURNALS AND REVIEWS.

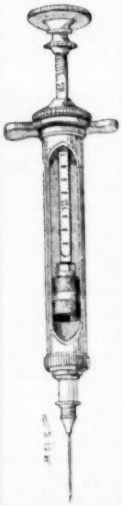
The Journal of Anatomy and Physiology. Conducted by Sir W. TURNER, Professor D. J. CUNNINGHAM, Professor A. MACALISTER, Professor J. G. M'KENDRICK, and Professor G. D. THANE. Vol. XXXII., Part 1. October, 1897. London: Charles Griffin and Co., Limited.—The present part contains several important articles, viz.:—1. A Topographical Sketch of the Lateral Wall of the Pelvic Cavity, with special reference to the Ovarian Groove, by William Waldeyer, M.D., with one plate. 2. The Insular District of the Cerebral Cortex in Man and in the Man-like Apes, by D. J. Cunningham, F.R.S., with ten woodcuts. 3. The Relation of the Fornix to the Margin of the Cerebral Cortex, by G. Elliot Smith, M.D., James King Travelling Scholar of the University of Sydney, St. John's College, Cambridge, with twenty-three woodcuts. 4. Skiagraphy after Injection of the Blood-vessels with Mercury, by Harold J. Stiles, M.B. Edin., with three woodcuts showing very good results. 5. Observations on the Development and Nutrition of Bone and Cartilage and on the Relations of Connective Tissues to each other in Health and Disease, by Professor Redfern, M.D. Lond., with twenty figures. 6. On the Anatomy of Macropus Rufus, by Bertram Windle, D.Sc. and F. G. Parsons, F.R.C.S. 7. Endarteritis Proliferans, by W. Ainslie Hollis, M.D. Cantab., with five woodcuts. Amongst the shorter communications are those of W. J. Otis, M.D. Boston, U.S.A., on the Structure of the Rectum; of Dr. H. D. Rolleston, on a Case of Abnormal Relation of the Vermiform Appendix to the Plica Vascularis, leading to Appendicitis; of Dr. Robert Howden, on a Case of Marked Distension of the Transverse and Descending Parts of the Colon; of Dr. Thomas H. Bryce, on a Pair of Negro Femora; of M. C. de Bruyne, of Ghent, on a Functional Adaptation of Phagocytosis; of Dr. W. Hunter, on a Modification of the Chrome-Silver Method for Nerve Cells; of Mr. C. F. Myers-Ward, on the Structure and Function of the Epididymis and Vas Deferens in the Higher Mammals, with a plate; and of Mr. F. Cole, on the Intromittent Sac of the Male Guinea-pig. Lastly, the part contains the Proceedings of the Anatomical Society.

We have received the first number of a monthly journal entitled *Centralblatt für die Grenzgebiete der Medizin und Chirurgie* (Jena: G. Fischer. Annual subscription 16 marks). It is edited by Dr. Hermann Schlesinger, of Vienna, and is promoted by Professor Mikulicz and Professor Naunyn, who about two years ago initiated a journal for original contributions to subjects on the "borderlands" of medicine and surgery. In some introductory remarks which these well-known authorities contribute to the *Centralblatt* it is intimated that the new periodical is intended to supplement the work of the more ambitious journal, which has already been the means of publication of several important memoirs. The new *Centralblatt* will be limited to abstracts and reports of published meetings and will contain no original matter. The number before us contains a review of recent advances in the study of Cerebral Abscess from Ear-disease, by Professor O. Körner; a review of the literature since 1892 on the Pathology and Treatment of Moveable Kidney, by Dr. J. Fischer; and upwards of thirty pages of abstracts of papers on subjects of medico-chirurgical interest.

New Inventions.

AN IMPROVED HYPODERMIC SYRINGE.

MESSRS. OPPENHEIMER, SON, AND CO., of 14, Worship-street, E.C., have recently brought out a hypodermic syringe which presents some novel and useful features. The piston is not packed with leather in the usual way but is made of cork, an arrangement which enables the syringe to be treated with any aqueous antiseptic solution or to be rendered aseptic by boiling without any fear of injury to the piston which would result if the packing were of leather. Moreover, the cork may be expanded so as to increase the tightness of the fit if required. For this purpose the piston-rod is provided with a square nut which can be fixed by drawing it into a recess at the top of the tube, and the fit of the piston may then be regulated by rotating the piston rod. There is no possibility of particles becoming detached from the cork, as may happen with some other forms of packing. The syringe is fitted in a hypodermic case containing twelve tubes of soluble hypodermics, an illustrated description of which appeared in THE LANCET of March 27th, 1897, p. 892.



THE LANCET.

LONDON: SATURDAY, JANUARY 15, 1898.

THERE are few things in medical practice more sacred or important than an engagement to attend a woman in childbirth. Every right-minded practitioner will agree with us in this view. Such a view should have the support of the law and undoubtedly the general opinion of the profession, in which we have shared, has been that such an engagement had the sanction and support of law. A very rude shock to this view has been given by a recent decision delivered by Judge ADDISON in the Greenwich County Court in a case in which Dr. WALTER SCOTT sued for his fee of 15*s.* in respect of his having been engaged to attend Mrs. PASCOE, the wife of a labourer, who subsequently engaged someone else (*vide* p. 199). Judge ADDISON has, we believe, the credit of being a good judge and in the meantime his opinion of the law on this subject will doubtless have wide acceptance. The husband (the defendant) said he never engaged the plaintiff and never gave his wife permission to pledge his credit. This seems to us a poor point and is inconsistent with what we believe to be the rule of law that a wife's contracts made for the sole purpose of supplying herself with necessaries suitable to her station in life are in general binding on the husband. But the judge held that even if the husband had himself engaged the plaintiff and subsequently seen fit to engage someone else the medical man had no remedy. On all other points he was equally adverse to the medical view of such claims. "How could the medical man charge for work he never did?" "Lawyers cannot recover fees in similar cases, neither can a doctor." There might be the argument that the plaintiff "booked" the engagement, "but that would not support his claim as the booking was only for the purpose of jogging his memory." The next point made by the judge is simply startling. "Notwithstanding an engagement the plaintiff would have been free on the date of its fulfilment not to have done so had he chosen and the defendant would have had no claim against him"! The plaintiff was non-suited and costs were ordered for the defendant.

On only one point do we find ourselves in agreement with the judge in this case and that is where he declares that the question is "an important one." It is especially important for the poorer classes to be able to rely on the binding nature of an engagement by a medical man to attend when summoned to a confinement. Previous engagement is of the very essence of safety and comfort of a woman who knows that shortly she will be in the pain and risks of child-birth. The judge's decision tends to demoralise the whole transaction. The woman may make another engagement; the medical man when he is sent for is free not to attend. This may be good law but it certainly is bad morals. We do not go so far as to say that the woman may not change her mind or the medical man, too, for that matter; but the judge would seem to imply that neither are under any obligation to announce this change of mind and so to liberate both parties from an engagement. Let us suppose that the woman changes her mind. Can anything be more simple or more obvious than her duty to intimate the fact to the gentleman whom she has engaged? We are persuaded that if this were done in reasonable time no medical man would object or think of carrying his claim into court. Judges should remember that it is the uncertainty of time in an obstetric engagement which makes it so reasonable that the claim of the plaintiff in such a case as this should be allowed. He orders his holidays, his time, his life, with reference to such engagements. He restricts his liberties and his engagements. The time occupied in merely attending a lying-in woman is only a part of the time reserved, so to speak, for her use. In other engagements a day and an hour may be fixed, but not so in this. The time is altogether uncertain while the duty in its nature and claim is superior to most other professional duties. For after all the chief argument for strong law on this subject, that is, law in accordance with the sense of duty, is derived from a consideration of the interest of lying-in women; and it is simply lamentable that from the judgment seat all contracts between them and their accoucheurs should be pronounced of no legal value and such as can be entirely ignored at the moment when service is required. It is fortunate that there is between such patients and their medical men a sense of obligation deeper than any which is fostered by the law as laid down by Judge ADDISON—too deep, let us hope, to be altered by such an unfortunate decision. Were it otherwise medical men, certainly the best medical men, would decline to trammel their lives with obstetric engagements, especially among the poor, and those who were compelled by circumstances to do so would have to secure themselves by substantial deposits beforehand in earnest of their fees.

Judge ADDISON drew a comparison between the case of lawyers in the higher ranks of practice and that of medical men in the lower. The comparison cannot well be made. Among the poor lawyers are not in demand to the same extent—for no one will deny that the labourer has, as a rule, more babies than law-suits; and from rich clients lawyers can easily command retainers which secure their position. Medicine and its aids are as indispensable to the poor as to the rich and its practitioners should have the support of law in their modest claims for hardly earned fees. The extreme modesty of these claims do not permit of their enforcement by any prolonged litigation, so that the county courts are likely to have their way without any fear of appeals in this class of cases. But this is an excellent reason why county court judges should not disparage the great unwritten contracts which govern life and death transactions between the poor and their medical advisers.

THE remarkable case of total extirpation of the stomach successfully performed by Dr. CARL SCHLATTER and recorded in another column of this issue cannot fail to attract much attention. We are glad to be able to present to our readers a full and detailed account of the

case from the pen of Dr. SCHLATTER himself. Within the last thirty years the triumphs of surgery have been so numerous and so brilliant that we have grown accustomed to hear of ever-new advances and of brilliant achievements; but to hear of the removal of the entire stomach and of the successful union of the œsophagus with the jejunum must excite anew our wonder at the powers of the human constitution and our admiration of the courage and technical skill of the surgeon.

The patient was a woman, fifty-six years of age, who was admitted to the Surgical Clinic of Zürich with a large, moveable tumour in the epigastric and left hypochondriac regions which was associated with persistent vomiting and rapid emaciation. It was diagnosed to be a malignant tumour of the stomach and an exploration was made to establish the diagnosis and to determine the possibility of operation. The growth was found to infiltrate the stomach so extensively that partial resection of the organ and gastro-enterostomy were alike impracticable. As the stomach was free from adhesions and as there was no evidence of secondary growths anywhere it was separated from the greater and lesser omentum and removed by cutting across the lower end of the œsophagus and the duodenum just beyond the pylorus. It was found impossible to approximate the duodenum and œsophagus, so the duodenum was closed by careful suture and then the œsophagus was united to the jejunum about a foot below its origin. For the all-important details of this brilliant operation we must refer our readers to Dr. SCHLATTER'S careful account of the case. The operation was a long one and occupied considerably over two hours, yet the patient did not suffer seriously from shock and she made an excellent recovery. She quickly regained the power of taking even solid food by the mouth and she gained 11 lb. in weight in six weeks after the operation.

The case is of the highest surgical and physiological importance. It demonstrates the possibility of removing the entire stomach in the human subject; this had already been proved in animals, particularly the dog. It shows that a patient can not only live after such a removal but can even thrive to the extent of gaining 2 lb. per week in weight. And it shows the feasibility of uniting the cut end of the gullet to the jejunum. This case has been led up to by the more extensive partial resections of the stomach which have been undertaken of late years as well as by experiments upon animals. It is well known that the stomach is much more tolerant of operative interference than is the small intestine, and we are not surprised to learn that the prolonged operation upon the stomach was not followed by profound shock. The freeing of the stomach ought to be accomplished also without serious loss of blood. We gather from Dr. SCHLATTER'S paper that the direct union of œsophagus and jejunum proved quite satisfactory, although vomiting occurred on two or three occasions; as a rule there was no regurgitation into the mouth of the contents of the intestine, and the intestinal secretions were able to deal so satisfactorily with the various elements of an ordinarily mixed diet that the fæces and urine showed no marked deviation from the normal beyond the diminution of the chlorides in the urine. Careful investigation of this case showed that the albumins of the food could be digested without the aid of the gastric juice and that after a short time the bowel accommodates itself to the reception of a moderate meal direct from the mouth. Dr. SCHLATTER thinks that he fed his patient a little too freely at first and that the vomiting that occurred then was due to this cause. In this he is probably right. But we gain something from the practical error, for we have the proof that in man vomiting can occur quite independently of the stomach in any way whatever.

The cases in which such an operation is permissible are very few in number. Where there is such extensive infiltration of the stomach secondary deposits in the glands of the liver would nearly always preclude a radical operation. It cannot be supposed, too, that every patient with cancer of the stomach can undergo such a prolonged and difficult operation as this without severe or even fatal shock. The execution of such an operation will test the powers of a surgeon very severely—his endurance, his strict carefulness to make good every step before passing on to the next, and his thorough command of the methods of aseptic surgery. The operation may long remain unique and it can hardly ever be other than one of very great rarity. And, after all, the physiological interest of the case almost transcends the surgical. Dr. SCHLATTER discusses the physiological problems with great care and acumen in the paper before us; the case must do something to lessen the importance of the gastric portions of the alimentary canal. We can well believe that this patient will be as familiar to all physiologists as Dr. BEAUMONT'S ALEXIS ST. MARTIN and we trust she will survive her operation as long as he did his injury and enjoy as good health as he did.

To Dr. SCHLATTER we must offer our sincere congratulations on the brilliant success that has attended his bold effort. He has accomplished the most striking and remarkable of all the many anastomoses of the alimentary canal and has effected one of the most brilliant advances of surgery on record. If he has imitators we trust they will copy his perfection of detail as well as his surgical courage.

WE drew attention last November to the important decision given in the Court of Queen's Bench in the case of BAKER *v.* WILLIAMS, by which it was determined that the Town Council of Southport had the right to require a definite amount of cubic space for each cow in a cowshed under their regulations as to dairies, cowsheds, &c., this requirement being one that can be made under the term "ventilation" named in the Order of the Privy Council which is now administered by the Local Government Board. This decision was not directly concerned with the amount of the cubic space in question, which was 800 cubic feet; but as it was given on a regulation insisting that this space should be the local minimum in the case of all cowsheds it has caused a great deal of uneasiness amongst agriculturists and owners of dairy farms generally, by whom it is contended that whilst such an amount of cubic space may perhaps be necessary in crowded town and cities a very much smaller amount ought to be deemed sufficient in country districts and even in sparsely populated urban areas. As the matter now stands nothing

could well be in a more unsatisfactory state. The Local Government Board have no power to require any minimum space at all and they are practically compelled to accept whatever amount of space is inserted by the local authority unless they are prepared to refuse their sanction altogether to the regulation on the ground that it is bad or too restrictive. The consequence is that in one district one minimum is adopted and in adjacent districts quite other ones are in force—a condition of affairs that tends to local dissatisfaction.

The first thing that is wanted is to get some minimum fixed that shall never be further lowered whether the cowshed be in an urban or a rural district and whether the cowshed be a new one or an existing one. Then some further rules for increased stringency might be laid down which should take some account of the surroundings of the cowsheds in so far as these affect ventilation, and for a term of years at least existing cowsheds might be dealt with somewhat more leniently than new ones. But in granting any concessions it must be remembered that conditions tending gravely to affect public health are at stake. This is not solely an agricultural question, it is one of supplying the public with milk that is either wholesome or liable to convey the germs of disease, notably of tuberculosis. The dairy industry is a prosperous one and public health considerations are not to be sacrificed to those of mere pecuniary gain.

The subject is one that must almost necessarily be taken cognisance of by the members of the Royal Commission on Tuberculosis, for the reference which has been made to them includes a request that they shall specify the administrative measures that are necessary to prevent tuberculosis in the human subject by reason of the consumption of the milk of tuberculous animals. When it is remembered that milch cows are often stalled in cowsheds for a period of from eight to ten months without ever getting, even for a moment, into the outer air, and when it is considered that, for the purposes of inducing an artificial secretion of milk, the cowsheds are kept at an abnormally high temperature, it is not difficult to conceive how considerations of fresh air and ventilation tend to be forgotten and to become subsidiary to the one idea of the amount of milk to be procured; it is, moreover, obvious how easily this condition of things leads to the steady increase of tuberculosis in the bovine race and especially amongst milch cows. For new cowsheds nothing less than 800 cubic feet should be thought of for the purposes of due ventilation even in rural areas, and anything short of this for existing cowsheds should be deemed to be of the nature of a provisional concession only and it should only be granted when it can be made under local circumstances that are compatible with the requirements of public health.

LLANDAFF CATHEDRAL BURIAL GROUND.—At a meeting of the Llandaff and Dinas Powis district council held on Jan. 5th a report presented by one of the sanitary inspectors stated that upon the occasion of a recent interment in the burial ground of Llandaff Cathedral coffins were found too near the surface and when the earth was removed a great nuisance was experienced by people living in houses near. The council decided to write to the Home Secretary and also to the dean and chapter.

Annotations.

"Ne quid nimis."

THE CASE FOR VACCINATION.

WE may direct attention, especially of those members of our profession who are engaged in the public health service, to the letter addressed to us by Dr. Bond, the indefatigable secretary of the Jenner Society. It is quite true, as he says, that in the vaccination controversy most of the talking is done by one side—that which deems Jenner to be a charlatan and vaccination a "filthy rite." Their letters and pamphlets, which constantly go over the same ground, teem with unverified assertions and are often disfigured by unwarranted abuse of the medical profession. Occasionally here and there a medical man ventures to give utterance to what he believes to be the truth based on his personal experience and on the accumulated facts of a century of vaccination. He often suffers for his well-meant temerity, for we know of hardly any subject in which personal vilification has more frequently sufficed to take the place of argument. It is too much to expect that any professional man should subject himself to such attacks at the hands of persons whose zeal outruns discretion and even decency of debate. Nor can we expect the Jenner Society to successfully deal with the multitudinous onslaughts that are now being made upon the practice it was founded to promote. Therefore it would be well for those who have the care of the public health — who are well informed upon the question as to the utility of vaccination and who could readily meet the arguments advanced against it — to descend into the arena. On the other hand it would not surprise us to learn that strong as is the opinion held by the vast majority of the profession upon the benefits which vaccination has conferred upon mankind there may well be a feeling of indifference to active propagandism of their views. Even the love of humanity may be chilled by the violent language with which the actions prompted by it are received; and so far as compulsion in the enforcement of a medical prescription is concerned there are few medical men who would support it were it not that they know its value. Nor does the question of "compulsion" or "no compulsion" necessarily enter into the sphere of the medical man's action. That is a political measure—a procedure adopted by the State deliberately with the intent of safeguarding the people so far as is possible from a disease which was once so common but which, owing to vaccination, has declined in intensity and extent.

AN INTERESTING EXPERIMENT.

ONE of the most puzzling problems in biological science is the apparently unending activity of unorganised ferments like diastase, pepsin, pancreatin, &c. The action of organised ferments such as yeast or bacteria is much more easy to understand. There is little doubt that as the nature and action of these unorganised ferments is understood we shall get a better understanding of the vital processes both in the animal and vegetable kingdom. That the unorganised ferments are essential to life, at least in the vegetable world, is pretty certain. Germination at any rate depends largely upon the presence of enzymes. In an interesting series of experiments lately conducted in the University of Vermont the effects of soaking more or less old seeds in solutions containing ferments like diastase and pepsin are recorded. From these experiments it appears that seeds which have lost their power of germination through being kept from two to twenty years may be fructified, so to speak, by immersing them for a time in a

solution containing an active unorganised ferment. By this process an increase of from 567 per cent. to 603 per cent. in the germination through the action of the artificially supplied ferments takes place. These results are of the utmost importance in throwing light upon the development of plants and as affording a means perhaps of restoring or giving impetus to seeds which otherwise might fail.

"TRANSMISSION OF SYPHILIS TO THE THIRD GENERATION."

A PAPER on this subject by Dr. George Ogilvie appears in the October and November (1897) numbers of the *British Journal of Dermatology*. Dr. Ogilvie considers the matter very exhaustively and has evidently studied very carefully the literature already existing that bears on this question. His contribution is divided into three parts. In the first the possibility of syphilis being transmitted to the third generation is discussed. Numerous authorities are quoted and cases cited which tend to prove that such an event is possible, but at the same time the numerous and obvious difficulties which lie in the way are fully admitted, the chief being that it must be granted once for all that to absolutely exclude acquired syphilis is impossible, and each individual case must be decided on the evidence that is obtainable. Dr. Ogilvie concludes this division of his subject thus: "On the one hand we are told that 'there is not the slightest evidence' of such transmission; on the other that 'there are undoubtedly cases' in which syphilis was thus transmitted. Both statements are equally unwarranted. The evidence before us furnishes us, if not with absolute proof, still with 'reasonable probability' that syphilis may descend to the third generation." In the second part of the paper the "dystrophic" influence of syphilis on the third generation is considered, but Dr. Ogilvie remarks that up to now statements to this effect are more or less vague conjectures and incapable of being proved by clinical evidence. In the last part of his essay the author comes to the conclusion that clinical evidence tends to show that healthy children born of syphilitic mothers during the secondary stage may receive a transitory immunity against syphilitic infection.

THE LINCOLN WATER-SUPPLY.

THE Lincoln Medical Society has rendered good service by awakening public attention to the condition of the water-supply of that town. On Nov. 29th last this society passed a resolution pointing out that as the water-supply was liable to contamination from many sources it was most important that there should be a bacteriological and chemical analysis made every fortnight. The water-supply from the Witham received the sewage effluent from the Bracebridge Asylum, where there had been some cases of typhoid fever. This resolution was forwarded to the mayor and the town council was also recommended to purchase a plot of ground measuring about 2024 square yards which could be obtained for £400 and which adjoined the premises of the waterworks reservoir. It would thus be possible to increase the size of the storage grounds or filters. To this the waterworks committee replied that in 1892 Sir George Buchanan, the former chief medical officer of the Local Government Board, had given evidence to the effect that the process of analysis then used "was of no earthly value for the demonstration of morbid elements." The waterworks committee would only sanction a reasonable expenditure for such analyses if it could be shown that recent improvements had rendered water analysis more reliable. The waterworks committee also pointed out that the sewage from the asylum mentioned passed through irrigation lands and that there was no reason to believe that the effluent contained any injurious properties. Even were this the case it is mixed with other waters, travels a long distance, and finally has to pass through the corporation filters, therefore the Lincoln supply is as safe as the Thames water drunk in London. Further, the excreta from the typhoid patients at the asylum had not been thrown into the drains, and the death-rate of Lincoln showed that the health of the inhabitants was in no wise affected. Dr. W. A. Carline, secretary of the Lincoln Medical Society, meets this reply by explaining that within the last four years there had been a very rapid development in bacteriological science. By the use of Pasteur filters and centrifugal action the collection, separation, and identification of different bacilli had been greatly facilitated and a much larger volume of water could now be examined. Nor was it necessary that the water examined should contain pathogenic germs, for where innocuous organisms can penetrate there also the disease germs can pass. As for the exclusion of typhoid excreta this was not always possible, as such excreta passed into the drains before the true character of the disease was ascertained; also mild and undiscovered cases were just as dangerous. As for the death-rate that of Maidstone compared favourably with that of Lincoln. Such is, briefly, the present position of the controversy. The whole question apparently depends upon the efficacy of the methods of filtration employed. When water is not gathered underground and brought to the town in a covered aqueduct or in iron pipes there is always danger of contamination. Therefore such water must be filtered, but there is the risk that the filters may get out of order. It is to check this risk that there should be constant analysis. Such examinations will indicate whether the water is up to its normal standard, and any departure from that standard will suggest the urgent necessity of immediately examining the condition of the filters. By such means it may be possible to nip the mischief in the bud. It seems absurd to spend large sums of public money in building reservoirs, filters, &c., and then to stint the small cost of analyses. This policy of spoiling the ship for the sake of a pennyworth of tar is the most foolish of all policies. Surely the ratepayers of Lincoln will not object to the very small outlay necessary so that a proper control may be established to watch over the quality of their water-supply. They will remember the well-merited abuse that was poured upon the town council of Maidstone because it had under similar circumstances ordered its medical officer of health to cease to analyse the water-supply of that town.

HOSPITAL ABUSE AT NEWPORT INFIRMARY.

WE have received from the medical staff of the Newport Infirmary the following document, with a request for its publication:—

"Considering the prominence attained by the unfortunate dismissal of Mr. Ensor from his post of honorary ophthalmic surgeon to the Newport and Monmouthshire Hospital by the directors, we think it due to ourselves to state the position which we have taken since the beginning of this controversy. At the meeting of directors in December, when Mr. Ensor was dismissed from his appointment, those of the staff who were present protested and voted against the mode of his dismissal. As soon afterwards as possible a meeting of the honorary medical staff was called to hear Mr. Ensor's explanation of the charges preferred against him at the directors' meeting. This explanation appeared to throw a fresh light upon the case and the staff drew up a unanimous memorial asking that the notice of dismissal should not take effect until Mr. Ensor had been allowed to state his side of the case before a full meeting of the board. Upon the memorial being sent to the directors the house committee asked the staff to meet them in order to discuss the memorial. The staff consented and urged the house committee to call a meeting of directors to hear Mr. Ensor. After a long discussion the house committee refused to call a special meeting unless Mr. Ensor first apologised (the

apology to be one that would satisfy their chairman and a member of the medical staff). This was agreed to by the staff who saw no other method of getting Mr. Ensor's case considered before his dismissal came into force. Mr. Ensor on receiving the form of apology drawn up as beforesaid refused to sign it, saying he had nothing to regret. The house committee then declined to call a special meeting of directors. The original memorial of the staff, however, came before the directors on Jan. 4th, four days after Mr. Ensor's connexion with the hospital had ceased. The whole staff had an interview with the directors when it was carried by a large majority that inasmuch as Mr. Ensor had written saying that he had no reason to regret his action the board refused to reopen the case. The staff then entered their strong protest against this action of the directors, and expressed their intention of publishing their protest in the medical papers. The annual meeting of subscribers will take place at the end of this month, when the matter will come up for further and probably final consideration. We do not now, therefore, propose to enter further into the merits of the case, except to say that no doubt Mr. Ensor acted under a sense of great provocation; but we do not support all his actions which led to the present crisis.

(Signed)

"MELVILLE BREWER.	A. GARROD THOMAS.
"REGD. E. WORMALD BREWER.	J. E MACORMACK.
"A. E. BULWER MARSH.	H. B. SEDDON.
"ROBERT J. PATON.	CHAS. STUART VINES.

"Jan. 7th, 1898."

As the matter is to be further considered at the forthcoming meeting of the subscribers we propose to reserve full comment until after this meeting except so far as regards one point and that is that we cannot approve of the action of the staff in agreeing to demand the apology. It was prejudging the case, for if Mr. Ensor had signed the apology it would have been tantamount to confessing himself in the wrong and almost to accepting dismissal. The staff should have insisted upon Mr. Ensor being heard in any case. As will be seen from a report in another column the members of the Newport Medical Society have unanimously passed a resolution disapproving of the action of the directors.

THE PREVENTION OF TYPHOID FEVER.

THE very instructive discussion upon the prevention of typhoid fever which has occupied three meetings of the Royal Medical and Chirurgical Society terminated on Tuesday last. It has been the means of bringing to light the various points of view from which this important subject may be regarded — the propagation of the virus by means of contaminated water- and food-supplies, the regulation of water-supplies and drainage, the germicidal action of the well-tilled soil, the bacteriological examination of suspected water, the conditions of existence and the persistence of the bacillus typhosus, the question of natural immunity and individual predisposition, besides many other interesting facts and suggestions as to the control of epidemics, methods of disinfection, and the like. Reserving for more detailed comment and examination the numerous points that have been raised in the course of the debate we must content ourselves to-day with merely noting that the speeches delivered at the final meeting were no less instructive than those that preceded, fully justifying the President's closing remarks upon the value and importance, practical and scientific, of so free a ventilation of the subject. Dr. Poore's advocacy of dry methods of the disposal of excreta in rural districts was strenuous and well maintained, nor do we think that his chief argument was shaken by the numerous criticisms that were passed upon it. However, as he forcibly pointed out in his reply, there is a wrong and a right way of disposal of refuse and when, as so often happens, the wrong way is chosen the method defeats its own object. He complained, and not without reason, of being misunderstood in his main contention by many of his critics. The discussion will have done good if it impresses on the Legislature the need for better control of water- and milk-supplies and the enlargement of the powers of district sanitary authorities, with whom should rest the responsibilities of securing the community from the invasion of epidemic disease.

THE LANCET COMMISSION ON THE METROPOLITAN WATER-SUPPLY.

WE publish in another column a letter from our Special Commissioner, who was appointed to give a description of the sources, treatment, and distribution of the present London water-supply (the results of his inquiry being published in various numbers of THE LANCET throughout last year). From this we seem to have unintentionally, in summarising the work in THE LANCET of Dec. 25th, 1897, conveyed to some readers the impression that this important and onerous investigation was undertaken with the view of setting a *financial* estimate upon the existing London water undertakings. We wish to state positively that the inquiry was not instituted with such a purpose in view and the following sentences from the article referred to may be quoted in support of this statement. "We have felt that, despite the great number of official inquiries and Royal Commissions that have been held on water-supply, not in the reports of any of these inquiries are to be found, at least compiled in a convenient way, facts and statistics relating in detail to the undertakings of the companies, beginning with the intake and ending with the means of distribution. At any rate we do not know of an independent inquiry ever having been made on these points. *It is exactly this omission which the articles that have appeared in* THE LANCET *this year are believed to repair.*" And again in a later sentence it is written that "after all it is largely the important question of the public health that is concerned *and this primarily is our reason for instituting the inquiry.*" In speaking of "the real value of the machinery and plant" we were referring to the points of view of adequacy and efficiency not to their intrinsic worth. We wish to add our thanks to those of our Special Commissioner to the secretaries and engineers of the various water companies for their courteous assistance in our inquiry.

THE BRITISH MEDICAL ASSOCIATION.

THE sixty-sixth annual meeting of the British Medical Association is to take place this year in Edinburgh, the President-elect being Sir Thomas Grainger Stewart, K.C B., M.D. Edin. The meeting will commence on Tuesday, July 26th, and terminate on Friday, July 29th. An address in Medicine will be delivered by Professor Thomas Fraser, M.D. Edin., one in Surgery by Professor Thomas Annandale, F.R.C.S. Edin., and one in Psychological Medicine by Sir John Batty Tuke, M.D. Edin. There will be as many as sixteen sections, the subjects of Anatomy and Physiology being assigned to separate sections, and three departments not hitherto separately formed are constituted distinct sections — namely, Neurology, Medicine in Relation to Life Assurance, and Tropical Diseases. The following is a list of the presidents and secretaries of the sections:—A. Medicine: President, Dr. G. W. Balfour; honorary secretaries, Dr. J. Graham Brown, Dr. S. H. Habershon, and Dr. G. L. Gulland. B. Surgery: President, Mr. J. Duncan, F.R.C.S. Edin.; honorary secretaries, Mr. F. M. Caird, Mr. J. W. B. Hodsdon, and Mr. T. K. Dalziel. C. Obstetrics and Diseases of Women: President, Professor A. R. Simpson; honorary secretaries, Dr. R. Milne Murray, Dr. F. W. N. Haultain, and Dr. J. Campbell. D. State Medicine: President, Professor Sir H. D. Littlejohn, M.D. Edin.; honorary secretaries, Dr. C. H. Stewart and Dr. W. L. Mackenzie. E. Psychology: President, Dr. T. S. Clouston; honorary

secretaries, Dr. J. Macpherson and Dr. G. M. Robertson. F. Neurology: President, Dr. Byrom Bramwell; honorary secretaries, Dr. R. A. Fleming and Dr. W. F. Robertson. G. Pathology: President, Professor W. S. Greenfield, M.D. Lond.; honorary secretaries, Mr. H. J. Stiles and Dr. R. Muir. H. Pharmacology and Therapeutics: President, Dr. J. O. Affleck; honorary secretaries, Dr. R. D. Helm and Dr. A. L. Gillespie. I. Ophthalmology: President, Dr. D. Argyll Robertson; honorary secretaries, Dr. W. G. Sym and Dr. A. MacGillivray. J. Laryngology and Otology: President, Dr. P. MacBride; honorary secretaries, Dr. A. B. Kelly and Dr. A. L. Turner. K. Diseases of Children: President, Dr. Joseph Bell; honorary secretaries, Dr. G. H. M. Dunlop, Dr. J. Thomson, and Dr. W. S. Colman. L. Dermatology: President, Dr. W. A. Jamieson; honorary secretaries, Dr. J. Limont and Dr. N. Walker. M. Medicine in Relation to Life Assurance: President, Dr. Claud Muirhead; honorary secretaries, Dr. J. Murdoch Brown and Dr. F. D. Boyd. N. Tropical Diseases: President, Dr. P. Manson; honorary secretaries, Mr. J. Cantlie and Surgeon-Captain M. L. Hughes. O. Anatomy: President, Sir J. Struthers, M.D. Edin.; honorary secretaries, Dr. D. Hepburn and Dr. J. R. Whitaker. P. Physiology: President, Professor W. Rutherford, M.D. Edin.; honorary secretaries, Dr. E. W. W. Carlier and Dr. R. A. Young.

THE FATE OF PRESCRIPTIONS.

IN a very well-known and deservedly popular Sunday newspaper, which some little time ago took the right course of doing away with its medical information column, there appears week by week an article written specially for women. In the issue of Jan. 9th the writer of this article relates the following story. She had a friend who, although aged forty-five years, could and did sit with her face to the light and did not show a wrinkle. This filled the writer of the article with admiration and she said so. Whereupon "she gave me a box of what she called 'Face Massage Cream' and told me the history of her case. ..... Eight years ago she noticed her first wrinkle ..... more wrinkles appeared until she was quite in despair. Finally she went to see a celebrated doctor in Harley-street ..... and he gave her a prescription. ..... She has given the prescription to dozens of her friends and they have been so pleased with it that now she thinks seriously of putting it on the market, so that it may have in the future a wider field of usefulness. ..... Nearly a year has passed since I wrote this article, and meantime my friend has placed the face massage cream upon the market, and it can now be found at ..... Full directions are given with each box, and I will answer any letters privately about it." It seems to us a most extraordinary thing that two educated ladies should not only be apparently quite unaware of the blatant dishonesty of this procedure but should also not be ashamed to publish it in the press. "She thinks seriously of putting it on the market." But it is not hers to put.

THE TOWN COUNCIL AND THE MEDICAL PROFESSION OF BATH.

WE lately reported and commented on a meeting of the medical profession of Bath summoned on the invitation of the Mayor to confer with regard to some scheme for securing the harmonious coöperation of the profession and the corporation in respect of the full utilisation of the baths of that historical city. The meeting ended in a resolution, suggested by the Mayor, that the profession should resolve itself as a whole into a committee for this purpose and elect an executive and perhaps a sub-committee to confer with the council when necessary on questions of a medical or quasi-medical character. The Mayor at a recent meeting of the corporation reported the matter. We regret to say that some members of the town council objected to adopt the course so sensibly proposed by the Mayor, appearing to think that it might interfere with the independence of the corporation in the management of the baths for which they are responsible to the ratepayers. We are sure that such an action of a committee is far from the conception of the profession and that on mature reflection Mr. Ricketts and other councillors will see that it is not involved in the plan suggested by the Mayor, the essence of which was to secure the judgment of the profession as a whole apart from any few members of it who might be in the corporation or have the ear of its members. Unfortunately one circumstance gave a little excuse to those who hesitated to adopt the Mayor's suggestion. The whole profession of Bath, numbering some ninety practitioners, includes two or three homœopaths. These were not included in the invitation of the Mayor to the profession. The circumstance has raised the whole ethical question of meeting homœopaths, thus embarrassing the Mayor and imperilling the success of his excellent scheme. The profession itself, we gather, is divided on the question, part holding that the rules which regulate consultation with homœopaths should obtain here, and part that the question is quite a different one. We are asked for our opinion and we have no hesitation in saying that we regard the question as quite simple. The meeting of a homœopath in a consultation is quite a different matter from meeting him in a committee. For the latter purpose he is a member of the profession as much as any other practitioner and entitled to a voice in a committee of the whole profession. In any such general committee the homœopathic practitioner will always be in a hopeless minority. His system has had a hundred years to commend itself and it remains a fantastic fad of a small section of the profession. But, this fact notwithstanding, he is by law in the profession and entitled to all the amenities of it when they do not involve others in grave ethical difficulties which cannot well arise out of any reasonable coöperation between the profession and the corporation. In the circumstances arising at Bath we should advise the entire elimination of the distinction of regular and homœopathic practitioner so as to facilitate the object of the Mayor. If it falls through let it not be due to the fault of the profession.

SCHOOL SANITATION AT NAPLES.

SINCE the appalling epidemic of cholera which decimated the population of Naples notable efforts have been made to improve the sanitary conditions of that town. Unfortunately there was so much to be done that it is not surprising if a great deal still remains undone. Thus Professor Eugenio Fazio in a report prepared for the Minister of Public Instruction gives a terrible picture of the actual condition of the elementary schools at Naples. From this official document we gather that Naples now possesses a population of 539,395 inhabitants, and yet there are only 81 schools for primary education. They are subdivided into 41 schools and 270 classes for boys and 40 schools and 210 classes for girls. These schools accommodate 11,518 boys and 8825 girls—total, 20,343 pupils. This is just about half the number of places that should be provided if the law on primary education was faithfully enforced. Thus 2200 demands for admission have had to be rejected. Of these 81 schools 6 are qualified from the sanitary point of view as good, 45 as bad, and 30 as homicidal. Sixty-six schools are in buildings that were not constructed as schools but as dwellings let out in flats. In many cases one or two flats have been rented in houses that are situated in very narrow streets. The school is often on the third or fourth floor and reached by a dark dirty staircase where foul closets are situated. The class-rooms vary greatly in respect to height, cubic capacity,

light, &c. Three-fourths of the class-rooms are on the second or third floor of houses in streets varying from 9 ft. to 16 ft. in width, and are so dark that artificial light has to be used in the daytime. The superficial space per pupil varies from 2 metres to 0·54 metre square and the cubic space from 10·31 to 1·95 cubic metres. In the new schools the superficial space per pupil is 1 metre square but the cubic space is 5·40 metres. In three-fifths of the class-rooms the flooring is made of porous bricks, in the new schools of cement, asphalt, or hard wood. In many of the schools the wall-paper is damp, torn, covered with stains and obscene drawings, and it serves as a ready refuge for numerous vermin. The furniture is often most unsuitable and may well induce curvature of the spine. Since Naples has been provided with a system of sewers there has been, however, a great improvement in the closets which in many instances are now properly flushed and trapped. In theory these schools should be visited every day by medical inspectors, as a matter of fact they are only inspected on special occasions. A proper staff of inspectors has not yet been appointed. To remedy this deplorable state of affairs Professor Fazio urges that a law should be enacted rendering the construction of primary schools by the municipality not optional but obligatory. Such a law must also stipulate that schools shall be built under certain conditions with regard to space, ventilation, light, furniture, drainage, &c. Professor Siniscalchi and Signor Varola, civil engineer, submit plans of what may be qualified as a sanitary school to accommodate 360 pupils, which at Naples would cost £3600, the price of the land included. Thirty-three such schools should be built at Naples and this would represent an expenditure of £160,000. As at the present time £4800 are paid per annum for the rent of the very unsuitable and unhealthy apartments which are used as schools. This sum would suffice to cover the cost of a loan of £160,000, repayable within twenty-five years. Thus the evil can be remedied without increasing local taxation, which in the poverty-stricken condition of the country it would be difficult to impose.

EARLY CHANGES IN THE SPINAL CORD IN TABES.

ALTHOUGH the pathological anatomy in advanced cases of tabes is pretty well known and recognised the changes occurring in early cases are, naturally enough, not so well known. In a recent number of the *Manchester Medical Chronicle* Dr. R. T. Williamson describes the condition of the cord in a patient whose symptoms were not very severe and in whom they had lasted a comparatively short time. His death was the result of an accident, so that the tabes had, at least directly, nothing to do with it. A few weeks before his death he had been an in-patient in the Manchester Royal Infirmary under the care of Dr. Thomas Harris and while there he was noticed to have an ataxic gait and to suffer from occasional severe pain in the back and in the left hip. His pupils did not react to light, the knee-jerks were absent, but there was no visceral affection. When the spinal cord was examined after hardening and staining there was found to be well-marked sclerosis in the posterior columns in the lumbar, dorsal and cervical regions, but the changes were most marked in the lumbar region. The other columns were not affected. The sclerosed parts showed the neuroglia greatly increased and the walls of the blood-vessels thickened. In the lowest lumbar region the sclerosis was chiefly in the white matter adjacent to the middle third of the posterior horn and in Burdach's column just internal to this. A semi-circular area at the posterior part of Burdach's column was less degenerated than the rest. This is the region described by Marie as probably consisting of endogenous fibres, and it is interesting to note that in Dr. Williamson's case the tract described by Dr. Alexander Bruce and Dr. Muir as probably of the same nature — the septo-marginal tract — is also undegenerated. The posterior nerve roots in the lumbar region were but little affected. In transverse section the nerve fibres seemed to be separated by more interstitial tissue than the fibres of the anterior roots at the same level, but no other change could be detected, either with Weigert's stain or with Marchi's. Nor could any change be observed in teased specimens stained by different methods. The pia mater in the lumbar region was a little increased in thickness Dr. Williamson alludes briefly to the various views as to the starting point of the morbid change in locomotor ataxy, especially with reference to the absence of marked changes of the posterior roots in his case. According to Obersteiner and Redlich such changes commence just at the point where the posterior roots pass through the pia mater to enter the cord and are the result of chronic meningitis and arterial sclerosis at this point. In Dr. Williamson's case also it is significant that the fibres in the lower lumbar region which were not degenerated were the so-called endogenous fibres—i.e., fibres which do not come from the posterior roots, but probably are commissural and connected with cells in the cord itself.

THE CENTENARY OF A MEDICAL POET.

THE success we anticipated[1] for the centenary of Dr. David Macbeth Moir, of Musselburgh, has been more than realised. Emeritus Professor Masson's address at the banquet was an eloquent yet judicious tribute to the kindly medical poet, for whom he had no difficulty in asserting a permanent place in literature and a not less enduring hold on the growing locality the gratitude of which he so honourably earned. The suggestion that a prize should be founded for proficiency in the poet's writings is to take effect, and Professor Masson, skilfully utilising the hint of THE LANCET that Dr. Moir's work in medical history should be recognised in the subjects set for competition, was at pains to show the many-sided culture attained by his hero and the finely developed character, in sentiment and practice, which it contributed to form. Such personalities as Dr. Moir's are happily to be found in all professions, but in none more than in the medical do they act as a stimulating and salutary social leaven. The duty-doing practitioner who not only lives up to his "sense of citizenship" but can make it his pastime to give poetic form to the generous emotions and ennobling thoughts inspired by contact with the men amongst whom he moves is indeed of "the salt of the earth." It will be much if the prize just instituted keeps fresh the life-work of the "medical poet." It will be more if it gives rise to similar developments, improving on the standard it has raised and so helping upward and onward our common evolution.

THE BACTERIOSCOPIC DIAGNOSIS OF DIPHTHERIA.

THE Bureau and Division Reports of the Department of Health, Chicago, for November, 1897, are supplemented by some remarks on "Diphtheria Diagnosis." It is stated that there is a notable increase in the number of bacteriological examinations made by the medical profession generally, so that the cases referred for diagnosis to the laboratory of the department have been fewer. A new form of culture-incubator, designed by Dr. W. H. Jaques, chief of the Diphtheria Antitoxin Staff, is figured and described, and an interesting excerpt from a paper by Dr. Jaques on the Diagnosis of Diphtheria is appended. He illustrates the importance of making a correct diagnosis by two examples culled from his own experience. In the one he was called

[1] THE LANCET, Dec. 18th, 1897, p. 1608.

to intubate the child of a milkman. A week before this one of the milkman's drivers had suffered from a sore throat and consulted a physician who administered antitoxin. The man resumed his work the next day. Dr. Jaques found diphtheria bacilli in both patients, and asks how many families may that driver have infected besides that of his employer? The second instance presents the converse, for here the child of a milkman suffered from inflammation of the throat which was pronounced to be diphtheria by the attending physician who did not however take a culture. The milkman, who had lost a child from diphtheria in the previous year, closed his business and transferred his customers to another dairyman. On the second day the child was so much better that another physician was called; he made a culture and found no bacilli. Dr. Jaques adds: "The milkman's business was ruined, and the first doctor threatened with suit for damages. Doctors have paid many judgments far less just than this milkman may get." He also declares that in cases of mixed infection the symptoms of ptomaine poisoning due to the Klebs-Löffler bacillus may be preceded by those due to staphylococci and streptococci, which latter may even subsist before the onset of the graver symptoms. He is convinced that if the Klebs-Löffler bacillus is the "principal invading germ" then "antitoxin will bring the crisis of the disease within twenty-four hours. If it is the streptococcus there will be a long hard fight." Streptococcus angina is marked by pain, and is not benefited by antitoxin; for, he says, the "toxin developed by the streptococcus is usually of small importance." We note these observations as showing the direction in which the differentiation of diphtheria is tending, and the importance that is being attached to bacterioscopic diagnosis.

THE DARENTH SCHOOLS.

IN view of the importance of the matter of training weak-minded children we felt it necessary to advert, in THE LANCET of Dec. 18th, 1897, to the recent resolution of the Metropolitan Asylums Board which proposes to amalgamate the schools and asylum of Darenth under one medical superintendent and to retain the educable and curable children in that large institution, the accommodation of which will then amount to over 2000. One of the managers of the Metropolitan Asylums Board writes to us in reference to the matter suggesting that we are not altogether rightly informed upon the position and forwarding a copy of "The Special Committee *re* Darenth Schools." We are obliged to this gentleman for the document, although it only represents a small portion of the controversy, and we had already seen this report and fully investigated the matter. That a considerable number of the managers were opposed to the continuance of a plan by which the educable and improveable children should remain part of such an immense institution as Darenth, where they cannot, as conclusively proved by the Departmental Committee, receive the individual attention necessary, is evidenced by the fact that an amendment, proposing that they should be removed, and their education carried on in an entirely distinct establishment, was only lost on a division by one vote (23 to 24).

LARYNGITIS STRIDULA WITH PERMANENT DYSPNŒA.

IN the first number of the *Archives de Médecine des Enfants*, a periodical which has just appeared under the editorship of Dr. J. Comby, Dr. Soca, of Montevideo, has published four cases of a hitherto undescribed form of laryngitis stridula characterised by inspiratory dyspnœa protracted for several weeks, but there were no paroxysmal attacks such as are the principal feature of the ordinary form. To avoid possible misunderstanding let us state that we do not refer to laryngismus stridulus, a condition with very different symptoms and generally regarded as simply a neurosis. One of Dr. Soca's patients, a girl aged two and a half years, was admitted to hospital on the eighth day of the disease in an exhausted state, with pale face, anxious expression and noisy and difficult respiration. There were stridulous inspirations with marked supra-clavicular, supra-sternal and epigastric recession. The respirations were 50, and the throat was normal. The chest gave no signs except some rhonchi and there was no evidence of disease of the lymphatic glands. The temperature was 103·8° F., the voice was hoarse, and there was a barking cough. All the symptoms were aggravated at night but there were no attacks of suffocation. Laryngoscopic examination, which could be made only imperfectly, showed subglottic laryngitis. The child remained in this condition for forty-six days, then the symptoms began to abate and in ten days recovery was complete. A similar attack had occurred six months previously. In another case, that of a boy, aged seven years, the attacks alternated irregularly with, and were even interrupted by, attacks of suffocation. This fact is important because it shows that both were manifestations of the same disease—laryngitis stridula—and that such attacks are not necessary symptoms (as is generally supposed). In a third case the malady was secondary to measles. In the presence of this permanent obstruction true croup would usually be diagnosed, but in none of the cases was the slightest trace of membrane or any other evidence of that disease ever observed. Laryngitis stridula with permanent dyspnœa has been described by Touchard and others, but their cases were of short duration—two or three days—and were always interrupted by attacks of suffocation.

DR. MICHAEL BEVERLEY AND THE NORFOLK AND NORWICH HOSPITAL.

ON the 8th inst. the quarterly meeting of the Board of Management of the above institution was held in the board-room of the hospital. The report was read, which stated that amongst other matters Dr. Beverley's resignation had been accepted with much regret, that he had been unanimously elected consulting surgeon, and that a resolution expressing the thanks and regret of the governing body would be presented to him. Dr. Beverley, in reply, said that he had been connected with the hospital for nearly thirty years and for twenty-five years he had been on the staff. He wished to explain why he was resigning at the end of twenty-five years instead of remaining as he could do for another ten years. He had served as assistant surgeon for sixteen years and during that long term of office had made up his mind that he would never stand in the way of promotion for his younger colleagues. Hospital appointments should not be held so long as they had hitherto been. The advances in surgery of late years had been most remarkable and for such advances and the admirable results accruing thereby the hospital was mainly indebted to the junior staff. Hence he thought that those who like himself had served the hospital for a long series of years should make room for others equally if not better qualified to carry on the surgical work. Dr. Beverley's modest action shows that he is a man full of the right spirit for the official of a charitable institution—a man absolutely devoid of self-seeking or pride. It is not everyone who would stand up and openly confess his inability to do surgical work under conditions of modern technique, but there is nothing to be ashamed of in such inability. We are glad to see, however, that the hospital will still be able to command Dr. Beverley's opinion, for the opinion of an old practitioner of wide experience is always of the greatest value. The esteem in which Dr. Beverley is held by his colleagues and friends is high, but none too high.

and we commend his example as one most worthy of imitation in their turn by younger men.

THE MEDICAL ACTS OF PARLIAMENT AND THE GENERAL MEDICAL COUNCIL.

THE views held by Mr. Victor Horsley with regard to the Medical Acts of Parliament are not endorsed by Mr. Brudenell Carter who, on Wednesday last, delivered an address before the South-West London Medical Society in reply to Mr. Horsley's address on "The Medical Acts of Parliament: as They Are and as They Ought to Be." The matter is one of such paramount importance to the profession that we published Mr. Horsley's address and it will be found in THE LANCET of Jan. 1st. We hope to publish Mr. Brudenell Carter's address next week.

THE OFFICIAL INQUIRY INTO THE MAIDSTONE EPIDEMIC.

WE understand that the official inquiry by the Local Government Board into the causes of the recent epidemic of typhoid fever at Maidstone will be opened on Jan. 31st. The inspectors to hold the investigation will be Mr. J. S. Davy, general inspector, Dr. Theodore Thomson, medical inspector, and Mr. G. W. Willcocks, engineer inspector. It appears that Dr. Thomson's inspection into the causes of this epidemic had to be suspended because of the demand for a formal inquiry; but it is much to be hoped that this does not mean that the results of the etiological researches usually made into such occurrences will therefore be lost in this exceptionally interesting and obscure case.

NURSING IN COUNTRY WORKHOUSES.

IN an excellent letter to the *Times*, full of common-sense, Lady Lothian calls attention to the course which events are likely to take under the present aspect of affairs in the question of workhouse nursing. A new Nursing Order has just been issued by the Local Government Board which creates a necessity for trained nurses—or, as the Local Government Board unfortunately calls them, nurses who have had the requisite "experience"—in workhouses and infirmaries throughout the kingdom. The question is, with the present unattractive nature of the service, where are they to come from? Lady Lothian gives an extract from a local (presumably provincial) paper which is worthy of reproduction:—

"Women, from eighteen to twenty-five, required as assistant nurses in the workhouse infirmary. Increased attention being given to the nursing of the pauper inmates, the workhouse committee have adopted a new policy likely to have useful results. The infirmary staff is to be increased on economical lines, not only making adequate provision for the care of patients but giving an opportunity of useful training in an important branch of nursing work. It is a new departure and deserves success."

This, in point of fact, is what we feared and indicated in a recent article on the subject. The provincial guardians unable to obtain trained women, and no longer having the Workhouse Infirmary Nursing Association to assist them, will go out into the highways and bye-ways and gather in all sorts and conditions of young women with the promise of giving them training. To the evils of such a system, and the inadvisability of bringing inexperienced girls of eighteen into contact with paupers of this class Lady Lothian very properly refers. And what kind of training, or even "experience" is likely to be obtained among the chronic cases—the semi-able-bodied paupers of a country workhouse—even though there may perhaps be one trained, though overworked, nurse to superintend the whole? Is it not time that the matter was submitted to the searching inquiry of a departmental committee?

WITH reference to an article in the *Chemist and Druggist* of Jan. 8th, 1898, purporting to publish the first part of a critical review of the forthcoming British Pharmacopœia, we are asked to state that the publication of the article is entirely unauthorised by the General Medical Council and that criticism of the work is at present not possible because it is still incomplete. We are also officially informed that the article contains numerous inaccuracies and that it bears internal evidence of having been based upon an unrevised proof.

ON Wednesday next, Jan. 19th, Mr. Hutchinson will deliver at the Clinical Museum, Park-crescent, Regent's-park, a New Year's address which will form a summary of the year's work at the Museum. All members of the medical profession are invited to attend. There will be a demonstration of cases at 4 P.M., and the address will be given afterwards.

THE following resolution was unanimously passed at a meeting of the Medical and Surgical Staff of the London Hospital Medical College on Jan. 7th:—

"That the Medical and Surgical Staff of the London Hospital is in favour of the scheme embodied in the Bill of 1897 for a new University of London, to be amended if possible according to the representations of the delegates of the Metropolitan Medical Schools."

THE Lord Mayor, President of the Metropolitan Hospital, has consented to take the chair at the festival dinner to be held on Monday, April 18th, at the Whitehall Room of the Hôtel Métropole.

OCCUPATIONAL MORTALITY.[1]

FIRST NOTICE.

AS intimated in THE LANCET of Dec. 25th, 1897, the second and concluding volume of Dr. Tatham's decennial supplement to the Fifty-fifth Report of the Registrar-General has recently been published by the Queen's printers. Part 1 of this work, which was published last year, deals with the subject of general mortality in regard to age and cause in England and Wales and in its several registration subdivisions; whilst Part 2, which is now before us, treats of the mortality incidental to males above the age of fifteen years engaged in the more important of the British industries during the three years 1890–92. The subject-matter of the present is similar to that of previous supplements, but the greater importance which Dr. Tatham now attaches to the subject of occupational mortality and the addition of a new Healthy District Life Table have necessitated the division of the work into two volumes.

Although in the present volume the matter relating to occupational mortality occupies, in addition to the tables, more than a hundred closely printed pages, it is a relief to find in a formal statistical treatise like this that the author has summarised within the first score of pages the results of his investigations and has contrived to arrange these pages, with the addition perhaps of pages 93 to 102 as an introduction to the more detailed remarks and tables in the remainder of the volume. In his preliminary remarks Dr. Tatham has taken pains to explain the various methods and processes by which his results have been obtained and he has done this in language at once forcible and clear. His readers, including ourselves, will be thankful to him for having employed technical terms but sparingly throughout the work—a departure from the ordinary practice which we would gladly see more frequently adopted.

At the last census the male population above fifteen years of age in England and Wales numbered in round numbers nearly 9,000,000, of which about 8,500,000 were returned

[1] Letter to the Registrar-General on the Mortality of Males engaged in Certain Occupations in the Three Years 1890–92. Supplement to the Fifty-fifth Annual Report of the Registrar-General. By John Tatham, M.A., M.D. Dub. Eyre and Spottiswoode. 1897.

as following some stated occupation, and the remainder, some half million in number, were returned as unoccupied. The terms "occupied" and "unoccupied" as here used must not, however, be taken as equivalent to "employed" and "unemployed," inasmuch as at the census those operatives who are temporarily out of work are included in the tables under their ordinary employment. Dr. Tatham's remarks with respect to the unoccupied members of the community are so interesting that they would seem to deserve more than cursory notice. It appears that before the census of 1881 persons who had retired from business, patients in lunatic asylums, and inmates of workhouses, of whatever age, were classed under their former occupations wherever these were stated; on the other hand, at the censuses of 1881 and 1891 all persons stated to have retired from business, all lunatics and those workhouse inmates who had passed their sixtieth year, were classed as of no occupation, consequently the mortality statistics of the last two inter-censal periods present us with an "unoccupied class" which is not represented in the records of earlier years. This class is of a mixed character, comprising as it does those who are unoccupied because of misfortune, of misconduct, or of failure of health, as well as those who are unoccupied by reason of easy circumstances. Of the unoccupied males between twenty-five and sixty-five years of age living at the last census 35 per cent. were returned as having retired from business, 23 per cent. as living on private means, and 15 per cent. as lunatics; the remainder, including an unknown proportion of paupers and prisoners, are returned indefinitely. With respect to the first of these divisions it would appear that among persons under sixty-five years of age described as "retired from business" there must be included many who have been compelled to retire on account of infirmity and also an uncertain but possibly large proportion of unfortunate as well as of dishonest and dissolute persons who would be more accurately described as having failed in business than as having retired from business. From what has been stated it will not be surprising to find that the death-rate of the unoccupied class as here defined is enormous; it is nearly 2½ times higher than that of the general population. But even these figures do not state the whole truth. Dr. Tatham finds that of the half million males returned as unoccupied about one-half are subject to a death-rate which does not exceed that of the general population. From this it would follow that the mortality of the remaining half must have been far in excess of the high figures above stated for unoccupied males collectively—a mortality which, as Dr. Tatham puts it, must be regarded as truly appalling. A table is given at page xiv. which exhibits very strikingly the difference between the mortality of unoccupied and occupied men. The rates are given for several ages. Disregarding the ages under twenty, concerning the accuracy of which there appears to be some doubt, it is seen that as compared with those of occupied males the death-rates of unoccupied males at ages twenty to twenty-five are nearly six times as great, at ages twenty-five to thirty-five nearly three and three-quarter times as great, and at ages thirty-five to forty-five more than two and three-quarter times as great. As age advances the disparity between the death-rates of the unemployed and the employed rapidly diminishes, so that at ages above sixty-five the mortality of the former exceeds that of the latter class by only 3 per cent. On comparing the rates of death of the unoccupied in the 1891 period with those of the same class in 1881 it appears that they have decreased considerably at ages under forty-five years whilst they have seriously increased at the higher ages. Probably the increase at these ages was mainly due to epidemic influenza, for it is known that this disease attacked with special severity persons who had passed middle-life and that it was the indirect cause of many deaths which were returned under other headings. There is also reason to believe that it was exceptionally fatal in some sections of the unoccupied class. The comparative mortality figures of occupied and of unoccupied males vary enormously; that is to say, the number of males of definite age constitution between their twenty-fifth and sixty-fifth year that would give 1000 deaths among the general population and 679 deaths in the healthy districts of England and Wales would give 953 deaths among occupied and 2215 among unoccupied males. By reference to a table it is shown that nearly two-thirds of the excess is due either to diseases of the nervous system or pulmonary consumption; but the mortality under the first of these headings is mainly, and that under the second is largely, due to the inclusion of a large proportion of insane persons in the unoccupied class. Among other causes of death diseases of the circulatory system account for 114 and influenza, together with respiratory diseases, accounts for 100 of the excess in the mortality figure of the unoccupied class. The mortality from cancer is more than double and that attributed to alcoholism (with liver disease), to diseases of the urinary system, and to suicide is about double as heavy among the unoccupied as it is among the occupied class. The excess of mortality from violence among unoccupied males possibly results from the addition to their ranks of men who, having been permanently disabled whilst at work, finally die from their injuries.

(To be continued.)

ANNUAL REPORT FOR 1896 OF THE MEDICAL OFFICER OF HEALTH OF THE ADMINISTRATIVE COUNTY OF LONDON.

FIRST NOTICE.

IN THE LANCET of Jan. 1st we noticed in general terms Mr. Shirley Murphy's recently issued report for the year 1896; but that document contains information so vast in amount and the importance of which to every inhabitant of the metropolis is so great that we have decided to reserve some of the subjects of which it treats for further and more detailed consideration. The present report, which is the fifth of the series commenced in the year 1892, differs but little in general arrangement and in scope from its predecessors. It is divided into two principal sections, the one statistical, the other administrative; the report, with appendices, extends to 124 folio pages and is well worthy of the most attentive perusal.

The population of the administrative county of London was ascertained by actual enumeration in the spring of 1896 and in the middle of that year it is estimated to have amounted to 4,443,311. The annual rate of persons married in the registration county of London was 18·0 per 1000 living, which is the highest marriage-rate recorded in London since the year 1883. The birth-rate in the same area averaged 30·2 per 1000 of the population, which is lower than the rate of any recent years, except 1894 when it was only 30·1. As in previous years the highest birth-rate in 1896 was in the eastern group of districts and the lowest in the western. The statement of the rate of birth as so many per 1000 living of both sexes is obviously unsatisfactory and we are therefore glad to see that Mr. Shirley Murphy has given in his table the proportion of births to 100 females living at the child-bearing age—namely, from fifteen to forty-five years. The deaths registered in the administrative county were equal to a rate of 18·1 per 1000 of the population, as compared with a rate of 20·1 in the ten years 1886 to 1895. Comparing the corrected death-rate of London with the rates of the principal provincial towns in 1896 it appears to have been lower than that of any of them except West Ham, Bristol, Nottingham, and Bradford.

As in previous reports Mr. Shirley Murphy has calculated for each of the metropolitan sanitary areas not only the death-rates corrected for age and sex differences of population, but also the comparative mortality figures in those areas. The mortality figure of London being taken at 1000 the lowest figure is that of Stoke Newington, 705 and the highest that of St. Luke, 1404. By an elaborate calculation Mr. Shirley Murphy shows that during the period 1891–96 as compared with 1881–90 there has been a mean annual saving of 2461 lives, and that this represents 104,742 years of "life capital" annually saved to the community. The mean annual number of lives saved has increased in recent years as compared with 1881–90, while the amount of "life capital" in proportion to the number of lives saved has decreased, this decrease having been particularly marked in the period 1891–96. The latter result is of course due to fluctuations in the mortality from certain diseases that affect particular ages. The deaths of children under one year of age in the county of London were in the proportion of 160 per 1000 births, which is slightly higher than the average rate in the previous ten years. From 1886 to 1895 London had a lower infantile

mortality than any of the chief provincial towns except West Ham and Bristol and in 1896 a lower mortality than any except Bristol. In the several sanitary areas of London infantile mortality varied considerably in 1896 as it had done in previous years. Of these areas St. Saviour's Southwark had the highest infantile mortality in the year 1896 and Hampstead the lowest. In many of the sanitary areas, however, the deaths under one year are too few in number to afford trustworthy rates of mortality. In the year 1896 the cases of small-pox notified to the London medical officers of health numbered 225 in all and were equal to a rate of 0·050 per 1000, the death-rate in London from this disease being only 0·002 per 1000. Mr. Shirley Murphy devotes several pages of his report to the question of small-pox as affected by vaccination which will repay attentive perusal, although we cannot adequately discuss his remarks here. Measles has been more fatal in London during 1896 than in any year since 1864. In the last ten years the average death-rate from measles has been higher than in the previous ten years. These facts have led to the re-opening of the question of the notification of measles in London and also to that of hospital provision for this disease. Up to the present time, however, nothing definite has been decided on either point. Of scarlet fever there were notified during 1896 as many as 25,758 cases, or nearly 6000 more than in the previous year. These 25,758 attacks gave a "case-rate" of 5·7 per 1000 of the population and resulted in a death-rate of 0·21 per 1000. In the first three quarters of 1896 the eastern group of districts suffered the highest mortality from scarlet fever and in the fourth quarter the central group suffered most heavily. During the year prosecutions were instituted in Marylebone and in Plumstead for wilful exposure of persons whilst infectious from scarlet fever. Considerable dissatisfaction seems to have been expressed by several of the local medical officers of health at the insufficiency of hospital accommodation for the isolation of scarlet fever cases, the disease having apparently spread in consequence. In certain districts, school attendance seems to have been instrumental in causing the dissemination of this disease. In the year 1896, there were notified 13,825 cases of diphtheria, giving a case-rate of 3·1 per 1000 of the population, compared with a rate of 2·6 in each of the two previous years; the cases however were of a slightly milder description in 1896 than in the preceding year. With the exception of that of West Ham the London death-rate from diphtheria in 1896 exceeded the rate of any of the chief provincial towns. The eastern districts of London suffered most severely from diphtheria, and the central districts least severely. The highest death-rate was in Chelsea (1·17) and the lowest in St. James's Westminster (0·09). With regard to the influence of school attendance in encouraging the spread both of this disease and of scarlet fever Mr. Shirley Murphy still continues to speak with that caution and reserve which become his position. Under the Notification Act, however, facts are rapidly accumulating; and we look forward with confidence to the time, probably not far distant, when Mr. Shirley Murphy will feel justified in pronouncing a decided opinion on this momentous question which is one that in the interest of education not less than in that of the public health urgently needs solution. We trust that when after adequate experience a deliberate judgment shall have been arrived at on this point definite and concerted preventive action will speedily follow. With respect to the use of antitoxic serum in the treatment of diphtheria Mr. Shirley Murphy gives some new and important information. Quoting from a special report on this subject presented to the Metropolitan Asylums Board by their medical superintendents he shows that while in 1894 before this special treatment had been adopted the fatality among 3042 cases was 29·6 per cent., in 1896 with the advantage of the treatment by antitoxic serum the fatality among 4175 cases fell to 20·8 per cent., this reduction in fatality having been observed at each age period. If we assume, adds Mr. Shirley Murphy, that the whole of this reduction of mortality has been due to this special treatment of patients in the hospitals of the Metropolitan Asylums Board there would have been without this treatment 365 additional deaths from diphtheria in London during 1896. Instead, therefore, of a London diphtheria death-rate of 0·59 per 1000 this death-rate would have been 0·68 per 1000, and instead of a London case-mortality of 19·3 per cent. there would have been a case-mortality of 21·9. The death-rate in 1894 had been 0·61 per 1000 and the case-mortality 23·6 per cent. The subject of seasonal variation both in relation to age distribution of attacks of diphtheria and to case fatality is ably discussed by Mr. Shirley Murphy in the present report and his observations merit careful consideration on the part of practitioners generally not less than on that of medical officers of health. In 1896 the number of attacks notified as from enteric fever was 3196, equal to a case-rate of 0·7 per 1000 persons living, which is lower than the rate of any other year since 1892. There were 564 deaths from enteric fever in London within the same period; the death-rate was therefore equal to 0·12 per 1000. For the whole year the central group of districts had the highest death-rate from enteric fever, and the western group the lowest, the district with the highest death-rate being the City and those with the lowest the Strand and St. Saviour's Southwark. The deaths from phthisis in London during 1896 numbered 7586 and were equal to a death-rate of 1·73 per 1000, which is lower than in any year mentioned in the tables. The Registrar-General having since 1894 distributed the deaths occurring in public institutions to the sanitary districts to which the patients belonged it is now possible to compare the phthisis death-rate of the various sanitary districts. The phthisis death-rate, both in 1895 and in 1896, was highest in the central group of districts and lowest in the western group. In the latter year the rates varied in the several sanitary districts from 3·24 in Holborn to 0·82 in Stoke Newington.

(*To be continued.*)

THE OXYTUBERCULIN TREATMENT OF TUBERCULOSIS.

THE REPORT OF A COMMITTEE OF THE FACULTY OF THE COOPER MEDICAL COLLEGE UPON THE HIRSCHFELDER TREATMENT.

IN February, 1896, Dr. J. O. Hirschfelder, of San Francisco, called the attention of some of his professional friends to a new method of treatment of tuberculosis with a bacteriological product of his devising which he called oxytuberculin. He presented a number of patients for examination and apparently demonstrated its value. Nevertheless he was advised to withhold the results from publication until further experience and time should verify them. Subsequently—that is, in April, 1897—he read before the State Medical Society a paper recording seventy cases treated with oxytuberculin.[1] Thirty of these were in advanced stages of the disease, many having vomicæ, and forty were in earlier stages. Each of these exhibited the physical signs of tuberculosis in one or other of its stages; bacilli were found in the sputa of all. Other physicians had examined a large number of the patients at the beginning of, and at different periods during, the treatment, and had verified the diagnosis. Dr. Hirschfelder reported that sixteen of these patients were cured—that is, no evidence of the disease can now be discovered objectively or subjectively. Thirty-six were much improved—that is, they are subjectively well, little evidence of present disease can be discovered, there are few or no sputa and no bacilli. In some of these latter large vomicæ exist, but seem healed. Six cases were slightly improved; six remained unchanged; one became worse and five died. All the latter were in the worst stages of the disease when treatment was begun; four died in from a month and a half to two months and one in three and a half months.

During the progress of these investigations Dr. Hirschfelder made forty-one series of culture experiments in the laboratory. These uniformly proved the inhibitory power of oxytuberculin upon the growth of tubercle bacilli in veal bouillon. It appeared a just inference that similar results might follow the injection of oxytuberculin into the body. With these facts and statements before them the members of the Faculty of Cooper Medical College determined to investigate the new treatment and for that purpose the undersigned committee was appointed. Its several members have repeatedly witnessed the laboratory culture experiments and have had before them for examination fifteen patients who have been under treatment from two to several months during the past

[1] Transactions of the Medical Society of the State of California, 1897.

two years, together with their histories, bacteriological specimens, and the corroborative evidence of other physicians as to the diagnosis. Two of these patients at the beginning of treatment presented a mild form of the disease, in five the disease was pronounced, in four the lung was very seriously involved, and the remaining four seemed hopeless.

There is no reason to doubt that all were cases of tuberculosis. Fever, cough, expectoration, hæmorrhages, night sweats, &c., had been present in nearly all; the physical signs and bacilli had been found in all; in many the diagnosis had been confirmed by other physicians. Physical examination of many of these cases was made by the members of the committee. No evidence of present tuberculosis could be discovered, although in some old cavities were found. The concurrent testimony of all except two or three recent cases was of complete return to health so far as appetite, weight, and vigour are concerned. There were no cough, expectoration, hæmorrhages, or other symptom of disease. Several had been discharged from treatment months ago.

The conclusions reached by the committee are: (1) Oxytuberculin prevents the growth of tubercle bacilli in veal bouillon; (2) a positive therapeutic value has been demonstrated for it in the fifteen cases examined, the more clearly as no other treatment was used; (3) no dangerous or untoward effects have resulted from its use; and (4) it has been legitimately brought before the profession since a full description of its mode of preparation has been published, thereby putting it within the reach of all.[2]

Finally the committee feels justified in certifying these facts to the profession to the end that oxytuberculin may be thoroughly tested, the limits of its successful application determined, and its place in therapeutics established at the earliest possible time. While some remarkable results have been obtained in advanced cases no claims are made for the later stages of the disease.

L. C. LANE (President),
C. N. ELLINWOOD,
A. BARKAN,
R. H. PLUMMER,
HENRY GIBBONS, JUN. (Dean),
} Committee.

PLAGUE IN THE NORTH-WEST PROVINCES OF INDIA.

AN interesting series of papers has been published by the Government of India relating to the outbreak of bubonic plague which occurred at Hardwar in the district of Saharanpur during April, May, and June, 1897. The infection was brought by pilgrims from Sind, Hardwar being a great pilgrimage centre. During the three months above mentioned four bathing fairs took place attracting a great number of pilgrims, and although there were eighteen cases of plague, of which fifteen proved fatal, the outbreak was promptly met and successfully suppressed. The medical officers upon whom rested the main responsibility were Surgeon-Major S. J. Thomson, sanitary commissioner in charge of the sanitary arrangements; Surgeon-Captain J. Chaytor White, Deputy Sanitary Commissioner; Surgeon-Major J. F. Tuohy, Civil Surgeon of Saharanpur, in direct charge of the medical arrangements; Surgeon-Captain T. F. Kelly, on special duty; Surgeon-Lieutenant-Colonel T. H. Hendley, C.I.E., Officiating Inspector-General of Civil Hospitals; and Surgeon-Major D. S. Reade, A.M.S., who visited the town during the course of the fairs; Surgeon-Captain A. W. Dawson and Mr. E. F. L. Winter with Mr. E. A. Kendal of the Indian Civil Service. In addition the Government received most valuable assistance from Thakur Hardan Singh, Deputy Magistrate; and Thakur Dalaman Singh, Tahsildar of Roorkee, to all of whom the Government express their best thanks.

The preventive and curative measures are set out at great length in the report but we can only shortly summarise them here. Pilgrims arriving by train were not only inspected under the provisions of the Epidemic Diseases Act at Saharanpur and Ghaziabad Junctions but in addition every passenger was inspected at Pathri Station, close to Hardwar by a staff of hospital assistants and vaccinators. Passengers found to have come from infected centres were sent on to Hardwar in locked carriages and lodged on arrival in the observation camp upon Rori Island, where they had to sleep and cook their food, though allowed to go into Hardwar to bathe and buy food. No disease occurred among them. Pilgrims coming by road were also inspected and the site of the fair was kept scrupulously clean by a large staff of sweepers and others numbering in all 700. All pilgrim lodging-houses were carefully inspected and any case of illness or death was promptly reported. Up to April 22nd there had been eight cases, so still more stringent measures were entered upon.

The position being explained to the members of the municipal board, the leading Brahmans of the town, and the priests of the temples, by the Lieutenant-Governor it was decided with the full and willing coöperation of the native gentlemen concerned (*a*) that the infected area should be evacuated and placed in quarantine; (*b*) that after evacuation the houses should be thoroughly cleansed and disinfected; (*c*) that all dead bodies before disposal, whether by burning or burial, should be examined by a medical officer; and (*d*) that all pilgrims from infected districts should reside in a special camp under medical observation. Those removed from the infected area were either to leave the district altogether after receiving permission from a medical officer or were to reside in a camp of observation.

In the infected area all huts or temporary structures were either demolished or burned, compensation being given, while permanent structures were carefully disinfected. During the month of May the fairs were not forbidden but pilgrims were discouraged as far as possible from visiting Hardwar. Such as did go were carefully inspected and not a single case of plague occurred among them. Between April 22nd and May 16th no case occurred in Hardwar, but from May 16th to June 8th nine cases occurred outside the infected area. To assist in diagnosing doubtful cases Mr. E. H. Hankin and Surgeon-Captain Milne were deputed to help the medical officers already on duty. After June 8th no case of plague occurred in Hardwar, and by the end of June the whole union, Hardwar, Kankhal, and Jawalapur, had been thoroughly cleaned and disinfected. Most of the special restrictions were withdrawn on July 12th, although the arrangements for the medical inspection of passengers by train remained in force.

About the middle of June an extensive mortality was observed among rats at Kankhal, a town distant about a mile from Hardwar, and upon the bodies of these rats being submitted to bacteriological examination the plague bacillus was detected. It was considered that these rats had become infected by eating grain or sweetmeats removed from Hardwar to Kankhal when plague was prevalent in the former place. The disease among the rats died away, but in order to prevent the transmission of the plague to men the following precautions were taken and proved eminently successful. Any house or go-down where rats were found to be dying in unusual numbers was disinfected in exactly the same way as if a case of plague had occurred there; grain, sugar, and any raw food-stuffs were exposed to sunlight and air for eight days and then locked up in a disinfected room for ten days before being used; sacks, bags, and baskets were either disinfected or destroyed.

From the end of June to the beginning of September no cases of plague occurred in either Hardwar or Kankhal, but during the first week of September an acute quickly fatal fever was reported as occurring in Kankhal. This upon inquiry proved to be merely the usual seasonal malaria. But on Sept. 16th an undoubted case of plague occurred and was at once removed to the plague hospital. Despite the stringent measures which were taken, isolation of the whole town, segregation of the sick, and thorough cleansing of plague-stricken houses, the disease spread slowly until up to Nov. 4th 51 cases with 38 deaths had occurred; no fresh case had been reported since Nov. 1st, 1897. On Oct. 16th the Lieutenant-Governor and other officials visited the town and found all the precautionary measures in admirable working order and more satisfactory still the native population were working in loyal coöperation with the Government. About this time it was found that the monkeys frequenting the town were dying in larger numbers than usual and the dead bodies were found to contain plague bacilli. This constituted a greater difficulty than the rats, for rats could be destroyed, while monkeys, on account of religious scruples, could not be, so

[2] Occidental Medical Times, November, 1896. The Medical News, New York, July 3rd, 1897. Journal of the American Medical Association, July 31st, 1897. Deutsche Medicinische Wochenschrift, May, 1897.

the only alternative was to trap them and keep them in isolated cages, which was done.

A study of these reports makes it very plain that plague can be met and stamped out if, as in this epidemic, all classes, even at the risk of some personal inconvenience and in many cases at the sacrifice of their most cherished convictions, work in harmony for the common good. But to bring about this most desirable end there must be a head and that head a Government that does not shrink from the essence of a Government—namely, the function of governing. If the Government of Bombay had not shilly-shallied in the foolish way it did enormous sums of money would have been saved, to say nothing of many valuable lives.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

MEETING OF COUNCIL.

A QUARTERLY meeting of the Council was held on Jan. 12th, the President, Sir WILLIAM MACCORMAC, Bart., being in the chair.

The minutes of the previous meeting of the Council were confirmed, with the exception of the resolution which was carried at that meeting, in which the Council expressed its willingness to consider evidence respecting the connexion of any individual Fellow or Member with an association canvassing for patients to the injury of private practitioners and allowing the well-to-do classes to take advantage of rates of payment arranged to meet the necessities of the poor. This resolution was referred to a committee who were to consider again the question involved and to report to the council.

It was resolved to hang in the corridor from the Inner Hall to the Common Room, the picture of Henry VIII. presenting the Act of Union to the Barbers and Surgeons which has been recently repaired.

The Senior Vice-president reported that on Jan. 6th, the day appointed for the half-yearly meeting of Fellows, only fifteen Fellows, including eight members of the Council, attended and that accordingly no meeting was held.

A letter was read from the Secretary of State for War acknowledging the receipt of the letter from the Presidents of the Royal Colleges of Physicians and Surgeons respecting the Army Medical Service.

A letter was read from Dr. William Gordon, the chairman of the Sub-Committee on Army Medical Reform of the Parliamentary Bills Committee of the British Medical Association, thanking the Council for the consideration given to the report of his committee and for the assistance rendered to the cause of reform by the letter to the Secretary of State for War.

MEETING OF FELLOWS.

THE half-yearly meeting of Fellows of the Royal College of Surgeons of England was fixed for Thursday, Jan. 6th, but when at the appointed time, 4 P.M., the two Vice-Presidents, Mr. Alfred Willett and Mr. H. G. Howse, entered the theatre only four Fellows were present. Some members of the Council came in immediately after the Vice-Presidents, and Mr. Willett as senior Vice-President having taken the chair the meeting waited for a quorum; only fifteen Fellows were present and of these more than half were members of the Council and the quorum for these meetings of Fellows has been fixed at thirty. The waiting, however, was in vain and at a quarter past four the Secretary rose and informed the Chairman that a quorum was not present and the meeting was declared at an end. The business which should have come before the meeting consisted merely of the confirmation of the minutes of the last meeting of Fellows, for no notice of any resolutions had been received.

AT a meeting of the Hull Corporation Asylum Committee on the 5th inst. Mr. J. S. Anderson, L.R.C.P. Lond., M.R.C.S. Eng., assistant to Dr. Merson, the medical superintendent of the City Asylum, Willerby, near Hull, was awarded an honorarium of £25 for extra services rendered on behalf of Dr. Merson who was ill but who has now resumed his official duties.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns 7628 births and 4612 deaths were registered during the week ending Jan. 8th. The annual rate of mortality in these towns, which had been 17·7 and 24·9 per 1000 in the two preceding weeks, declined again last week to 21·4. In London the rate was 23·0 per 1000, while it averaged 20·4 in the thirty-two provincial towns. The lowest rates in these towns were 12·6 in Cardiff, 15·8 in Oldham, 16·5 in Portsmouth, and 16·6 in Brighton; the highest rates were 24·4 in Salford, 25·0 in Blackburn, 26·8 in Plymouth, and 27·5 in Norwich. The 4612 deaths included 546 which were referred to the principal zymotic diseases, against 480 and 650 in the two preceding weeks; of these, 220 resulted from measles, 128 from whooping-cough, 74 from diphtheria, 44 from scarlet fever, 43 from "fever" (principally enteric), and 37 from diarrhœa. No death from any of these diseases was recorded last week in Plymouth; in the other towns they caused the lowest death-rates in Gateshead, Newcastle-upon-Tyne, Birkenhead, and Portsmouth, and the highest rates in Preston, Swansea, Derby, and Blackburn. The greatest mortality from measles occurred in Oldham, London, Halifax, Croydon, Derby, Swansea, and Blackburn; from scarlet fever in Wolverhampton; from whooping-cough in Leeds, Birmingham, and Norwich; and from "fever" in Blackburn and Preston. The 74 deaths from diphtheria included 50 in London, 3 in West Ham, and 3 in Leicester. No fatal case of small-pox was registered during the week under notice, either in London or in any other of the thirty-three large towns, and no small-pox patients were under treatment in any of the Metropolitan Asylum Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital was 3450 on Saturday last, the 8th inst., against 3733, 3619, and 3572 at the end of the three preceding weeks; 239 new cases were admitted during the week, against 260, 222, and 273 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 353 and 701 in the two preceding weeks, declined to 533 last week, and were 139 below the corrected average. The causes of 66, or 1·4 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Nottingham, Leeds, Newcastle-upon-Tyne, and in thirteen other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Leicester, Liverpool, Sheffield, and Hull.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 18·6 and 24·1 per 1000 in the two preceding weeks, further rose to 24·3 during the week ending Jan. 8th, and was 2·9 per 1000 above the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 18·7 in Perth and 21·1 in Aberdeen to 25·0 in Edinburgh and 34·9 in Greenock. The 733 deaths in these towns included 21 which were referred to diarrhœa, 16 to whooping-cough, 14 to scarlet fever, 14 to measles, 9 to diphtheria, and 2 to "fever." In all, 76 deaths resulted from these principal zymotic diseases, against 65 and 73 in the two preceding weeks. These 76 deaths were equal to an annual rate of 2·6 per 1000, which was slightly above the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of whooping-cough, which had been 26 and 27 in the two preceding weeks, declined to 16 last week, of which 12 occurred in Glasgow and 2 in Greenock. The 14 deaths referred to measles were within one of the number in the preceding week, and included 11 in Glasgow. The fatal cases of scarlet fever, which had declined from 12 to 8 in the four preceding weeks, rose again to 14 last week, of which 4 occurred in Glasgow, 3 in Edinburgh, and 3 in Greenock. The deaths from diphtheria, which had been 5 and 3 in the two preceding weeks, rose to 9 last week, and included 4 in Aberdeen, 2 in Glasgow, and 2 in Edinburgh. The deaths referred to diseases of the respiratory organs in these towns, which had been 149 and 186 in the two preceding weeks, fell to 177 last week, but were 25 above the number in the

corresponding period of last year. The causes of 47, or more than 6 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 21·8 and 33·3 per 1000 in the two preceding weeks, declined again to 31·0 during the week ending Jan. 8th. During the thirteen weeks of last quarter the death-rate in the city averaged 24·6 per 1000, the rate during the same period being 19·4 both in London and in Edinburgh. The 203 deaths registered in Dublin during the week under notice showed a decline of 15 from the number in the preceding week, and included 18 which were referred to the principal zymotic diseases, against 13 in each of the two preceding weeks; of these, 6 resulted from "fever" (principally enteric), 5 from scarlet fever, 4 from whooping-cough, 3 from diarrhœa, and not one either from small-pox or diphtheria. These 18 deaths were equal to an annual rate of 2·7 per 1000, the zymotic death-rate during the same period being 3·3 in London and 1·9 in Edinburgh. The deaths referred to different forms of "fever," which had been 10, 5, and 6 in the three preceding weeks, were again 6 last week. The fatal cases of measles, which had declined from 4 to 1 in the three preceding weeks, rose again to 5 last week. The mortality from diphtheria and from diarrhœa also exceeded that recorded in recent weeks. The 203 deaths in Dublin last week included 38 of infants under one year of age and 60 of persons aged upwards of sixty years; the deaths of infants showed a further increase upon recent weekly numbers, while those of elderly persons showed a slight decline. Five inquest cases and 8 deaths from violence were registered; and 62, or nearly a third, of the deaths occurred in public institutions. The causes of 10, or nearly 5 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

NAVAL MEDICAL SERVICE.

THE following appointments are announced:—Deputy Inspector-Generals of Hospitals and Fleets: R. W. Coppinger to Jamaica Hospital and R. S. P. Griffiths to Haslar Hospital. Surgeons: R. C. Munday to Jamaica Hospital; J. C. Rowan to the *Talbot*; S. Conner to the *Albacore*; B. E. Heather to the *Alecto*; and I. E. Darnell to Royal Victoria Yard, Deptford.

INDIA AND INDIAN MEDICAL SERVICES.

The services of Surgeon-Captain Peck, Bengal, are replaced at the disposal of the Military Department. Surgeon-Captain Grant has been appointed on Plague duty at Hubli under Surgeon-Captain Meyer.

The Queen has approved of the following promotions among the Officers of the Indian Medical Service made by the Government of India:—Brigade-Surgeon-Lieutenant-Colonels to be Surgeon-Colonels:—Bengal Establishment: Benjamin Franklin, C.I.E., and George McBride Davis, M.D., D.S.O. Bombay Establishment: George William Robertson Hay, M.D., and Randolph Caldecott. Surgeon-Lieutenant-Colonels to be Brigade-Surgeon-Lieutenant-Colonels: Bengal Establishment: Adam Scott Reid. (Substituted for the *Gazette* notice of Oct. 22nd, 1897.) Bombay Establishment: James Sutherland Wilkins, D.S.O., and William Alexander Barren.

VOLUNTEER CORPS.

Artillery: 2nd Glamorganshire: Surgeon-Lieutenant J. L. Thomas to be Surgeon-Captain. 1st North Riding of Yorkshire (Western Division, Royal Artillery): Surgeon-Lieutenant-Colonel T. R. Pearson, M.D., resigns his commission. *Rifle:* 3rd Volunteer Battalion the Welsh Regiment: Surgeon-Major J. L. Leckie to be Surgeon-Lieutenant-Colonel; Surgeon-Lieutenant W. W. Jones, M.B., to be Surgeon-Captain. 21st Middlesex (the Finsbury): Surgeon-Major J. Adams to be Surgeon-Lieutenant-Colonel. 1st Volunteer Battalion Prince of Wales's (North Staffordshire Regiment): Charles Sumner Edwards to be Surgeon-Lieutenant.

VOLUNTEER AMBULANCE SCHOOL OF INSTRUCTION.

The appointment of General Medical Officer Instructor of the Volunteer Ambulance School of Instruction rendered vacant by the resignation of Surgeon-Major H. F. Stokes, London Rifle Brigade, has been accepted by Brigade-Surgeon-Lieutenant-Colonel P. B. Giles, V.D., F.R.C.S., Welsh Border Brigade.

THE SOUDAN EXPEDITION.

Great activity has been displayed recently in connexion with the strengthening of the Egyptian force in the Soudan. As we stated last week intelligence had been received of a threatened advance of the Dervishes northwards. The Khalifa, it was believed, did not intend to wait quietly at Omdurman to be attacked, but taking advantage of a favourable condition of things, to assume the offensive. A large Dervish force was massed at Metemmeh and Shendy with plentiful supplies ready for an advance and it was thought by the Egyptian Intelligence Department that an attack on Berber and possibly on other points was threatened. The garrison of Berber consists of a large Egyptian force armed with artillery and maxims, and the Sirdar's troops, fighting well as they always do behind entrenchments, should be able to give a good account of themselves and repel all attacks. Still it was very wisely considered that the force in the Soudan required to be strengthened by a strong re-inforcement of British troops. The British regiments in Cairo were accordingly moved up and their places supplied by others from this country while an addition was also made to the British force in Egypt so as to have troops available for field service in case of need. The news, moreover, of a French expedition having penetrated in the direction of the Upper Nile and occupied Fashoda probably was not without its influence politically on the authorities in this country. A number of officers of the medical staff and men of the Medical Staff Corps have already been, or are being, sent to Egypt. It does not seem at all clear, however, that the Anglo-Egyptian expeditionary force is likely to take the initiative and advance on the Dervishes in the direction of Khartoum. The probability is that Sir H. Kitchener's Egyptian force, having been strengthened by a British reinforcement, will await attack and select their own time for making their intended advance on Khartoum.

THE INDIAN FRONTIER WAR.

It is satisfactory to think that there is reason to believe that the outlook regarding the frontier war in India has somewhat improved. The Shinawaris have begun to send in their rifles in token of their surrender, the Chumlawals are ready to submit, and two important sections of the Bunerwals have also sent a deputation to General Meiklejohn to arrange terms for their submission. The latest military operations comprise the capture of important passes by General Blood's column with insignificant loss; roads were being made and the transport of baggage was being quickly and safely carried out for the force concentrated at Kingargali. The campaign against the Afridis was, it is needless to say, reluctantly undertaken, but in the opinion of the Indian Government it had to be done. The Tirah expedition was conducted in the face of terrible physical difficulties and it has entailed great expense and loss of life, with much hardship and sacrifices on the part of our Indian troops. Although it has not up to the present time been followed by the submission of the Afridi tribes—for according to the latest telegrams the Zakha Khel Afridis are still irreconcileable—the neck of the rebellion on the frontier has nevertheless been broken and it is quite possible that the Afridis may yet follow the example of the other tribes inhabiting these bleak highlands rather than risk a re-opening of operations against them in the spring. Once their submission has been obtained the policy towards them will, no doubt, be one of conciliation, and it is hoped that in time our relations with them will improve. The health of the troops continues to be fairly good, and the wounded are, speaking generally, doing well.

PHYSICAL CONDITION OF RECRUITS FOR THE ARMY.

The misquotation of some of the evidence given before Lord Wantage's committee in 1891 by Deputy-Surgeon-General Don by Mr. H. O. Arnold-Foster in a letter to the *Times* has called forth a letter of protest from Deputy-Surgeon-General Don and Mr. Arnold-Foster has made a handsome apology. This incident, however, has served to call attention to Deputy-Surgeon-General Don's views on the subject of recruiting in the service of which he has been for many years engaged. The passage alluded to says: "Any gain (in older recruits) to be secured in physical development would be more than

counterbalanced by deteriorated moral adaptability. Under twenty both body and mind are flexible and amenable to the good influences of military drill and discipline; *over* twenty, recruits, except for the Royal Engineers, are now drawn from the strata of poor workmen, dissipated idlers, and rolling stones. It would not be desirable to hold out any large monetary inducements for the purpose of getting men over twenty; if you dip into that stratum you would frequently get very undesirable men." He explains, however, that he does not mean that all recruits enlisted after twenty years of age are necessarily bad, but that a recruit caught before that age is much more likely to make a better soldier.

MEDICAL STAFF CORPS FOR INDIA.

It is, we believe, the first time that men of the Medical Staff Corps have proceeded for service to India. Surgeon-Major-General O'Dwyer inspected a draft of the Medical Staff Corps on Monday last previously to the draft leaving for India and expressed his satisfaction with their appearance and outfit. He also spoke of the responsibility of the position in which the men were to be placed and urged them to uphold on all occasions the honour and credit of the corps.

Amongst the names mentioned in the despatches from Major-General Sir B. Blood, K.C.B., and Major-General E. R. Elles, C.B., regarding the operations of the Malakand and Mohmand Field Forces are those of Surgeon-Captain Hugo, Surgeon-Colonel J. C. G. Carmichael, Surgeon-Colonel E. Townsend, Surgeon-Captain J. B. Jameson, and Surgeon-Colonel J. F. Williamson.

At a quarterly meeting of the directors of the Naval Medical Supplemental Fund, held on the 11th inst., Inspector-General W. H. Lloyd in the chair, the sum of £32 was distributed among the several applicants.

Correspondence.

"Audi alteram partem."

THE NATURE AND TREATMENT OF WHOOPING-COUGH.

To the Editors of THE LANCET.

SIRS,—There was no subject which seemed to me some years ago more deserving of study at the Hospital for Sick Children in Great Ormond-street than the nature and treatment of whooping-cough. The various theories which had prevailed at various times on these matters appeared to me to require and justify most patient and careful study. The singular inability which some of my esteemed friends and colleagues displayed to free their minds from the influence of opinion and rely upon observation sometimes amused but more often surprised me. The idea that whooping-cough was nerve disturbance due to association and imitation and possible of control by the poor little patient, and that a birch-rod was a reliable curative agent, annoyed and almost disgusted me, and I have never forgotten the story told to me by the wife of a great friend now one of our leaders in anatomy how she told her little son that Dr. Niemeyer recommended the birch-rod. When a few weeks later the lady herself was suffering, having caught the malady from her children, her son asked whether she remembered what she had said about Dr. Niemeyer and how whooping-cough should be treated. That must be about five-and-twenty years ago, but things have changed, and at last there seems to be very little doubt or difference of opinion in the profession as to the real nature of whooping-cough.

When Sir Thomas Watson, not very long before he ended an honoured life, wrote to tell me that his grand-children were suffering from the malady, and how far and how very greatly his own views had changed on many points connected with it, I entertained no doubt but that error was being corrected, truth established, and that our profession would not much longer remain ignorant of the nature of the malady so serious in its effects as whooping-cough. To dispel the idea that an infant of a few weeks old could vocalise a "whoop" and that this peculiar symptom was never absent and by its presence alone diagnostic was not very difficult; and now we can see a movement in the direction of classing the malady among the infectious diseases which demand preventive methods for its treatment more than, or at least as much as, curative methods.

Seeing a notice in some of the daily journals that a ward is being prepared at the Hospital for Sick Children for whooping-cough I think it well to draw attention to the singular fact that the more we bring cases together in the same apartment the more violent are the symptoms and the more difficult the relief of them. In the crowded courts in the West-Central district I have often seen three or four children suffer in one room from the malady and it was usual in my experience for one or more to die. Fathers and mothers were liable when breathing the poisoned air of such a room to catch the disease, although they had already had it themselves in childhood, and the same principles seemed to apply to whooping-cough as to maladies that spread like influenza and others by the agency of the atmosphere. The question, therefore, arises whether a hospital like that in Great Ormond-street is not acting inconsistently with the principles on which whooping-cough should be treated if it creates a powerful focus of infection by a special ward and does really more harm than good by following such a plan. This harm might possibly be diminished by a constant and scientific disinfection of the poisoned air; but unfortunately the science of atmospheric disinfection is not understood, though for years I have drawn attention in THE LANCET to this important subject and for the necessity of some improvement in the ignorance displayed in the composition and method of administration of the vapores of our Pharmacopœia, which are of a very inadequate or totally negative value for the destruction of infective germs, and from which no assistance could be obtained in the management of a whooping-cough ward. Further, it appears to me very doubtful whether any knowledge gained by the study of whooping-cough in such a ward would justify the injury done by the increase in severity and duration of symptoms and consequent sufferings of patients.

I am, Sirs, yours faithfully,

Gunterston-road, W., Jan. 3rd, 1898. ROBERT LEE.

"THE UNQUALIFIED ASSISTANT AND THE GENERAL MEDICAL COUNCIL."

To the Editors of THE LANCET.

SIRS,—Since the adoption of the momentous resolution of the General Medical Council with reference to the employment of unqualified assistants I have been looking in your columns for some interesting correspondence thereon, and am at last pleased to see that the subject is exciting the attention it deserves. But almost all the letters which have as yet appeared treat the question from a purely personal point of view. They insist on the capacity of the unqualified assistant, his competence for doing work that a qualified assistant might consider beneath him, and one correspondent has even gone so far as to refer to the necessity of an unqualified assistant for night work. "Justitia" says: "These assistants, therefore, help their principals only in a small degree in their medical work, but this assistance is a great boon to them when there is pressure of work and when the principal is not in the way or otherwise engaged." If the General Medical Council were to frame laws on such hypotheses as these one could easily imagine the legal chaos into which they would inevitably fall and how futile any such resolutions would in practice become. Furthermore, it has been stated that there is ambiguity in the rule laid down by the Council and that under the *alias* of "dispensers" or "surgery attendants" we shall soon see our old friend the unqualified assistant redivivus. To my mind there can be no ambiguity whatsoever: the rule refers specifically to the *legitimate* employment of dispensers, &c., and there can be no doubt as to what the *legitimate* employment of a dispenser is, viz., to dispense medicines. And here, it seems to me, we have the crux of the whole matter. It is useless to affect ignorance of what are the duties of a dispenser or surgery attendant; these duties certainly do not include seeing, visiting, or prescribing for patients, and it is these duties which the unqualified assistant has been performing whether his principal was "otherwise engaged" or not. The line of demarcation is absolutely clear; the assistant either acts as a doctor or he does not, and surely it is to the true interest of the profession that

in the former capacity he should be eradicated entirely, and the sooner the better. The letter from Mr. Wigham in your current issue comparing the organisations of the legal and medical professions comes in very aptly indeed and I can only hope that it will be widely read by those who in their short-sighted selfishness are cavilling at this much needed reform. Hoping, though I fear vainly, that the profession as a whole will, for once at all events, sink its personal interests and support the Council in this wise and timely action,

I am, Sirs, yours faithfully,

R. L. GUTHRIE.

Paper-buildings, Temple, E.C., Jan. 8th, 1898.

To the Editors of THE LANCET.

SIRS,—I have read with regret the letters in THE LANCET of Jan. 8th by "Justitia" and "X. P." on the subject of "The Unqualified Assistant and the General Medical Council." In both town and country we find all medical men strongly opposed to quacks who practise the healing art and yet, as soon as the members of the Council have taken a step in the right direction to suppress unqualified practice, a number of general practitioners immediately cry out against them. I have no hesitation in saying that unqualified assistants (as now employed) constitute the worst form of quackery.

Who are the unqualified assistants? They are chiefly a number of men who have spent eight, nine, or ten years at one or other of our different universities or colleges and left without obtaining any degree, and in some cases without even having passed a single preliminary examination. We are all well acquainted with the way in which they have spent their college career, and yet, notwithstanding, some principals think it is only right and just that such men should usurp the positions of the industrious students who, after an honourable career, obtained their full qualifications. "Justitia" says: "These assistants (unqualified) do all the dispensing and bookkeeping and attend to a number of minor matters which the qualified assistant would consider beneath his notice." Why not have a competent dispenser who can attend certain hours daily to do dispensary and bookkeeping? This evidently would not suit such men as those who keep unqualified assistants simply because a few emergency cases occurring during their absence might go to a neighbouring practitioner.

As to the qualified assistant considering "minor matters beneath his notice," no medical man with any love or zeal for his work would consider any duties connected with his profession *infra dig.* Why have we recently had so many letters written to the medical papers by principals on behalf of their unqualified assistants? Is it not for the reason they know that they can treat them a little worse than their groom or a little better than their surgery boy? Or is it a case of a few extra pounds a year which they would have to pay for a qualified man? Why do men who employ unqualified assistants and set so much value on their services not give them a chance or encourage them to become qualified? To possess a degree would deduct nothing from their present knowledge but, on the other hand, would render their services more valuable, by enabling them to sign death certificates and obtain fees for giving evidence at inquests, &c. In conclusion, I think it is the duty of all qualified men to support the Council in their endeavours to suppress illegitimate practice.

I am, Sirs, faithfully yours,

Jan. 10th, 1898. M.B.

To the Editors of THE LANCET.

SIRS,—The decision of the Council on the subject of unqualified assistants is so far-reaching that I hope it will be modified in some degree in the interests both of the public and of the profession. There are all sorts and conditions of unqualified assistants ranging from those who have had no medical education whatever either at hospital or medical school to those who have taken out all their lectures and hospital practice and passed all but their final examination. Surely it is a great injustice to class these men as all alike. The modification I would suggest is as follows. Allow those who are now acting as unqualified assistants and who have passed all but their final examination a reasonable time—say two years—in which to get qualified, permitting them to earn their living as heretofore during that period. In future allow a man who has passed his third professional examination to act as an unqualified assistant for a limited period—say two or three years; and if at the expiration of that period he fails to get on the Register, withdraw the permission. I am sure the public would gain by such an arrangement, for a man who has had two or three years' experience in general practice in addition to his hospital work is a better trained man than one who has had hospital experience alone. The profession would gain, for all who are engaged in general practice know the difficulty of getting bookkeeping, dispensing, and general surgery work done by qualified men. As a rule, even if these are willing they know little or nothing about such work, and many practitioners cannot find other work sufficient to employ an assistant who will not do this dispensing, &c. A senior student would be willing to do this and, in addition, could see under supervision many cases of illness which would add to his own knowledge. I mean cases which in all probability he would never see in a hospital; he would also be able to follow up his cases to their termination.

Of course, if every *qualified* man were compelled to act as an assistant for a certain time after he was qualified (and I should very strongly urge that such a regulation be made in the interests of the public) the difficulties created by the recent action of the Council would soon disappear. There would be a larger demand by qualified assistants for situations and they would be compelled to do the necessary surgery work, which they now think beneath them, and the public would be secured against practitioners acting on their own responsibility who have very little practical knowledge of the treatment of such diseases as are not seen in hospitals. At present a youth who has passed his L.S.A. is qualified to practise medicine, surgery and midwifery on his own account. If the public only realised how little *practical* knowledge of treatment is required to enable a man to become qualified, pressure would soon be brought to bear to bring about a change.

I am, Sirs, yours truly,

GENERAL PRACTITIONER OF TWENTY-SIX

Jan. 7th, 1898. YEARS' STANDING.

To the Editors of THE LANCET.

SIRS,—Since you are allowing a discussion in the columns of THE LANCET on the recent decision of the General Medical Council with regard to unqualified assistants perhaps a letter dealing with the subject from a feminine point of view may not be out of place. If the decision of the Council is to be considered final our husbands are deprived of the means of earning a livelihood after five, ten, or even more years spent in the service of the public. I am far from upholding the right of unqualified men to practice—by all means abolish the institution for the sake of the men themselves, who work harder and certainly longer hours than any navvy and for a pittance which the said navvy would despise; but give those who already exist a chance to qualify or admit them to the profession on modified terms. I dare venture to predict that 99 of every 100 so admitted would only too thankfully qualify as they gained money and leisure. My own is a somewhat peculiar case, let us hope unique. I am a nurse and the wife of a medical student who has also been for ten years an unqualified assistant. He is a hard-working, steady man and an abstainer, and our one aim in life is for my husband to qualify; but lack of means, and consequently of time for reading, have prevented us attaining this end, though from six to nine months' leisure would make it an accomplished fact. Knowing this I arranged a scheme which I thought would give us the necessary time, &c. I hold the papers of one of the largest London nurse training schools and have also excellent testimonials and references and am capable of earning two and a half guineas a week at private nursing. I thought nothing would be easier than to get on the staff of one of the nursing coöperations and in a few months my husband could leave his appointment and finish reading while I worked to keep myself and two children till such time as he should qualify. But I reckoned without my host, for, being a married woman, none of the nursing institutions to which I have applied will give me work; nor for the same reason can I get district nursing. If I were single or a widow *without child* I could get anything that is open to the profession, but because I am married and have an old-fashioned affection for my husband and a laudable desire to help him I am debarred, and I think it cannot be right that I should be prevented from working for such a

eason when women with illegitimate children are to my knowledge employed in the nursing profession. I have hitherto been perfectly honest in my dealings with people when seeking employment but these constant rejections on the score of marriage make one feel tempted to resort to untruthfulness, a course which would not trouble a person without a conscience. One lady superintendent of whom I asked the reason of the objection to married women and widows with children told me it was because they begged from their patients! I enclose my name and address and with apologies for trespassing so largely on your valuable space I am, Sirs, yours obediently,

THE WIFE OF AN UNQUALIFIED ASSISTANT.

Jan. 3rd, 1898.

"THE HOSPITALS, THE PROFESSION, AND THE PUBLIC."

To the Editors of THE LANCET.

SIRS,—Dr. Lionel S. Beale shows by the letter you publish in THE LANCET of Jan. 8th that he is labouring under complete misapprehension as to my views. I am in entire agreement with Dr. Lionel Beale that care must be taken to provide that the "one out-patient who happens to be sickening for serious illness," and indeed all cases of distressing illnesses such as he indicates, should be carefully safeguarded and provided for. The meshes of the net which there is now every reason to hope will soon be affixed to the entrance of each out-patient department must by careful thought and the exercise of infinite tact, in coöperation with the medical staff, be so adjusted as to secure that no cases of the kind shall be excluded.

I am confident that an arrangement can be come to in the out-patient departments which will secure this result and at the same time win the approval and confidence of every intelligent member of the medical profession.

I am, Sirs, your obedient servant,

HENRY C. BURDETT.

The Lodge, Porchester-square, W., Jan. 7th, 1898.

THE CASE FOR VACCINATION.

To the Editors of THE LANCET.

SIRS,—I shall be glad if you will allow me at this early period in the new year to invite the attention of your readers to the need for their coöperation in meeting the very active agitation which is being carried on by the Anti-vaccination League at the present time. In view of the probability of legislation during the ensuing session of Parliament in furtherance of the recommendation of the late Royal Commission an effort is being made to influence the members of the Legislature both directly (by personal communications) and indirectly (through their local constituents). To effect this latter object letters are addressed to such local publications as will admit them, not only attacking compulsory vaccination but seeking to discredit vaccination itself. It is of the greatest importance that these letters, wherever they appear, should be answered. It has been too much the practice hitherto to disregard them as in most cases unworthy of notice. To this mistaken policy is in a large degree attributable the hold the anti-vaccination agitation has obtained in many localities. To reply to them is useful in two ways: it serves at the same time to neutralise misrepresentations and to educate the public to appreciate the facts on which vaccination rests. This is work which must be done mainly by the medical profession, for few others are in a position to do it. But there is another reason why it is incumbent on the profession to undertake it. Anti-vaccinators constantly make it a subject of complaint that vaccination is the only medical prescription which is enforced by law. This is true; and it is therefore only right that as the maintenance of vaccination so largely rests upon medical opinion every effort should be made to instruct the public as to the justification for this position. I trust, therefore, that whenever any of your readers see a statement in any local paper, whether in the form of a paragraph or letter, misrepresenting the case for vaccination, if they do not themselves reply to it, they will send the paper to the Jenner Society, that it may be dealt with if practicable and desirable. I have, on behalf of the society, during the past year replied to a large number of such letters, but it is only possible for me to do a limited amount of work of this kind and it is much better that local attacks should, if possible, be met by local defence. I shall at all times be glad to give any assistance towards this work. It is a form of warfare which needs some little training to ensure success; for the enemy is crafty, is familiar with the use of his weapons, and too often does not mind striking a foul blow when a fair one fails.

I am, Sirs, yours truly,

FRANCIS T. BOND, M.D. Lond.,
Hon. Secretary, Jenner Society.

Gloucester, Jan. 10th, 1898.

SANTONIN IN SPRUE.

To the Editors of THE LANCET.

SIRS,—I trust you will again grant me a little of your valuable space to urge upon my brother practitioners, especially those practising in tropical countries, the certainty of curing sprue by my method of using santonin. The experience I have had since I last wrote to you in 1891 confirms me in my belief that all cases yield to it. I have not yet had a failure. It has been said that the sprue of China differs from that met with in India and elsewhere. I doubt it; but granting that it remains that since my return from China in 1894 I have had several cases invalided home from India and my treatment has cured them after they had tried everything at the hands of those who in this country are considered to be authorities on the subject. In a recent issue you review a book published by Dr. Thin on sprue. He I now see accepts my explanation of the disease, but only recommends the same old weary course of treatment—milk, rest, and change of climate. I do not think the disease of sufficient importance to deserve a book to itself; it is only another kind of diarrhœa and a chapter in any work on intestinal diseases would be quite enough. Usually the diseases to which poor humanity are subject are equally cursed by the number and variety of their cures. Sprue stands alone in being calmly accepted as incurable. But my experience leads me to believe that of all diseases it is the one which in its symptoms shows such a logical sequence that I was led to guess at its cause and publish an account of it long before I was able to verify my conclusions at a necropsy on a patient under the care of Dr. Thin and, better still, acting on my conclusions, to cure the disease wherever I met it. In conclusion I wish only to say that I lay more stress than ever on the details of the treatment as described in my published paper and the fact that the refined white santonin is quite useless.

I am, Sirs, yours faithfully,

CHARLES BEGG.

Hotel Cecil, W.C., Jan. 10th, 1898.

MEDICAL FEES UNDER THE POOR-LAW.

To the Editors of THE LANCET.

SIRS,—Will you kindly answer me the following question in your next issue?

I receive a parish order to attend a woman in my district. The case was one of compound comminuted fracture of the left leg. I set the fracture and visited her twice; at my own suggestion she was removed to the workhouse for the reason that she lived in a wretched hovel and there was no one to nurse her or to assist me in dressing her leg—in fact, the case could not have been properly treated where she lived. Some of the guardians have succeeded in carrying a resolution that I should be paid half the fee only. I have given a receipt for that amount on account. The chairman and other right-thinking men are of opinion that I am entitled to the full fee, as I am myself. What is your opinion—am I or am I not?

I am, Sirs, yours faithfully,

E. P. KING,
Medical Officer Chepstow Workhouse and District.

Chepstow, Jan. 5th, 1898.

P.S.—The clerk told them that they could not split the fee, they must pay all or none.

*** We see no reason for any reduction.—ED. L.

THE LANCET COMMISSION ON THE METROPOLITAN WATER-SUPPLY.

To the Editors of THE LANCET.

SIRS,—With reference to the remarks in your annual summary on the above subject will you allow me to say that the articles which I have written for THE LANCET were intended to give an account of the sources of the present London water-supply, of how the water is treated, and how distributed? The articles were not written "to decide the real value of the machinery and plant." On these questions I have no knowledge whatever.

I should be glad with your permission to take this opportunity to thank the secretaries and engineers of the metropolitan water companies for the invariable courtesy and patience with which they have given me their assistance to carry out the inquiry which I undertook. They have devoted a great deal of time to and trouble in making clear to me the difficult and complicated arrangements over which they have charge. Had it not been for their careful and disinterested help the articles could not have been written. From them I have uniformly received the greatest consideration. In more than one case the responsible officials have gone out of their way to make my inquiry a source of great interest and instruction and I shall always look back with pleasure to many days spent amongst the Kentish hills and in the valleys of the Thames and of the Lea.

I am, Sirs, your obedient servant,

Jan. 3rd, 1898. YOUR SPECIAL COMMISSIONER.

"THE MEDICAL ACTS."

To the Editors of THE LANCET.

SIRS,—In his letter in THE LANCET of Jan. 8th Mr. Wigham sounds the right note and his contention is at the bottom of one of our greatest grievances—viz., the vast amount of unqualified but not illegal practice which flourishes in our midst to the detriment of the legitimate practitioner.

Instead of tinkering with the old Medical Act imposing fresh penalties upon us and hedging us round with further restrictions why does not the General Medical Council propose fresh legislation and make it penal for anyone except a registered practitioner to practise medicine for pay as it is now in the case of the law? Let a man practise as a lawyer, whether he calls himself a lawyer or not, and he is soon stopped; but he can practise as a medical man with impunity so long as he does not assume a title. What we want is not protection for our titles—they can take care of themselves—but for ourselves and our livelihood, which is now being taken from us by the great army of quacks, druggists (many of whom are not even registered as chemists), and irresponsible nobodies upon whom the law has no hold whatever, whereas the registered practitioner is at the mercy of anyone who chooses to attack him. All this might easily be stopped by putting medicine upon the same footing as the law and a single clause in an Act of Parliament would effect the mighty reform which would be hailed with delight by every

Bolton, Jan. 11th, 1898. GENERAL PRACTITIONER.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Hospital Sunday in Liverpool.

HOSPITAL SUNDAY and "Wet Sunday" might well be considered in Liverpool synonymous terms; the weather on Sunday, the 9th inst., when collections were made in the various places of worship in the city and suburbs on behalf of the hospitals, proving no exception to the miserable atmospheric conditions prevailing in previous years. The contributions to the same fund in 1897 fell short of the year 1896 by some £300, hence an urgent appeal was made by the committee of the Hospital Sunday Fund for increased contributions, which was warmly seconded by the press and the clergy. It is satisfactory to record that the appeals were not made in vain, the collective contributions up to date being in excess of last year's efforts. In some churches the collections were postponed owing to thinned congregations due to the inclemency of the weather, whilst in others additional appeals will be made. It is reasonable to hope, when the returns shall be completed, for a larger collective sum than was obtained in 1897. Needless to say that the usual annual growl finds vent in the columns of the local press as to the inexpediency of appealing for contributions at this period of the year, but as this question has been fully threshed out by the Hospital Sunday Committee it is not at all certain that any financial improvement would accrue to the hospitals from an alteration of date to April or May. Moreover, the hospitals would lose more than a quarter's contribution of the amounts allotted on the first change of date. This would prove a serious matter and no doubt largely influences the committee in adhering to the present fixture.

A Busy Day for the City Coroner.

The city coroner had an arduous task on the 4th inst. conducting inquiries as to the cause of death of ten individuals. The medical evidence in a large proportion of these cases went to prove that the deaths were either due to excessive drinking or to accidents resulting therefrom.

Death of Mr. Robert Hibbert Taylor, M.D., L.R.C.S. Edin.

Dr. R. H. Taylor, a retired local practitioner, died on the 5th inst. at the advanced age of eighty-five years. He was born at Dumfries and pursued his medical education at Edinburgh, Guy's Hospital, Paris and Berlin, eventually settling down in Liverpool in 1845. For a considerable number of years he was attached to the Liverpool Eye and Ear Infirmary as one of its honorary surgeons and latterly as consulting surgeon. He was the first lecturer on ophthalmic medicine and surgery in the old Royal Infirmary School of Medicine. He was largely interested in philanthropic movements, especially those connected with the blind and deaf and dumb. Dr. Taylor retired from active practice twelve years ago but continued to give his services to the poor gratuitously. He leaves a widow and a grown-up family.

Jan. 11th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Richmond District Lunatic Asylum.

THE governors of the Richmond Asylum met in the board-room of Grangegorman Prison on the 11th inst. and received the report of the medical superintendent, Mr. Conolly Norman. It appeared that during the last fortnight four new cases of beri-beri had occurred among the female patients of the asylum. The board voted a fee of five guineas to Professor McWeeney for the special report referring to the means by which an abatement in the spread of infective disease in the hospital might be effected.

Poor-law Medical Superannuation.

The Irish Medical Association has recently addressed letters of inquiry to the candidates for the Parliamentary representation of the St. Stephen's Green Division of Dublin in reference to their views as regards Poor-law superannuation. The replies of both gentlemen—Mr. Campbell, Q.C., and Count Plunket—were published in the morning papers of the 8th inst. and were both of a character to satisfy the promotor of a measure for the superannuation of the Poor-law medical men of Ireland.

The Ulster Medical Society.

At the monthly meeting of the Ulster Medical Society held on Jan. 6th a discussion took place in reference to alleged irregularities in notifying cases of infectious disease and it was unanimously decided to adopt a recommendation of the Council, who suggested that a letter should be sent to each member of the society urging that care should be taken in following up the after history of cases of infectious disease notified to the public officer of health. Dr. Whitaker, who was present, made some most suitable observations on the question which were of great value as coming from the health officer of Belfast as well as from one who is most friendly in his relations with all branches of the

medical profession in that city. Professor Thompson read a paper on the Action of Peptone and its Precursors on the Function of the Kidney, and Surgeon-Lieutenant-Colonel Moorhead, M.D.Q.U.I., read a paper on the Life and Work of Civil Surgeons in India. A notice of motion, "That the hour of meeting of this society be changed from half-past eight to eight," was, after discussion, withdrawn, as the feeling of the great majority of those present was in favour of the former time.

The Proposed Infectious Diseases Hospital at Belfast.

The question as to where the Infectious Diseases Hospital is to be located in Belfast is still not quite settled. The city corporation, who have had great difficulty in obtaining a suitable site for their hospital, asked the asylum governors to grant them thirty-five acres, a portion of their grounds at Purdysburn which is separated by a road and a large drain from the rest of the asylum grounds; and on Dec. 14th, 1896, at a meeting of the Asylums Board, it was decided, when the request of the corporation came up for consideration, on the motion of Professor Cuming, M.D. R.U.I., not to offer any obstacle in the way of the erection of the proposed hospital. The Ulster Medical Society has waited on the Law Committee of the corporation asking them not to take this ground as it was too far away from the city for a hospital for infectious diseases. In the draft of the Belfast Hospitals Bill which the city corporation propose to introduce next session of Parliament they have applied for power to take this ground for their new infectious hospital and the Board of Control of Asylums in Dublin having seen a draft of this Bill wrote to the Belfast Asylum governors stating that in their opinion the lands of Purdysburn proposed to be taken are necessary for the asylum and that it is not desirable for an infectious hospital to be placed there. They also ask for an expression of the views of the governors and at the monthly meeting of the asylum board held on Jan. 10th a resolution was passed to the effect that the board saw no reason to depart from their previous decision of Dec. 14th, 1896. The matter will now have to be arranged between the city corporation and the Dublin Board of Control. It seems strange that the Board of Control, if they were opposed to the location of the hospital at Purdysburn, did not take action before allowing matters to go so far.

Trinity College Graduates in Ulster.

At a large and representative meeting of Trinity College graduates held in Belfast on Jan. 10th the following resolution was passed unanimously: "That an annual dinner of old T.C.D. men resident in Belfast and the North of Ireland or connected therewith be held, the first of such dinners to be held in March next." A large committee has been appointed to carry out the arrangements.

County Armagh Asylum.

At a meeting of the governors held on Jan. 10th the new superintendent, Mr. Lawless, in his report said that the time had now come when it became necessary to consider the appointment of an assistant medical officer. He drew attention also to the fact that there was no supply of drinking water to the new hospital, the existing supply coming from the river—in his opinion a dangerous source. He suggested that they should apply to the town commissioners for a supply. The board decided that the matter of the appointment of an assistant medical officer should be postponed for the present.

Attack on a Medical Man by an Inmate of a Workhouse.

Dr. Montgomery, medical officer of the Mallow Union Hospital, whilst riding along a road near the workhouse was attacked by one of the inmates. The onslaught, which was quite unexpected, caused the horse to plunge and fall. Before Dr. Montgomery could extricate himself his assailant rushed at him again. Fortunately, the clerk of the union was at hand and pluckily grappled with the infuriated pauper, who was eventually given in charge to the police. Luckily the injuries sustained by Dr. Montgomery were not of a serious nature. The board of guardians had the matter under consideration at the following meeting and one of the guardians stated he believed the mental equilibrium of Dr. Montgomery's assailant was not all that could be desired.

Jan. 9th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Procedure at Examinations for Hospital Appointments.

THE Commission chosen to draw up new regulations for the competitive examinations for those seeking appointments as hospital medical officers has recently come to a very grave decision. For some time past the candidates have requested that at this examination the scientific value of works published by them should be taken into account and that marks should be given in this subject in addition to those given in the others because the latter merely deal with proficiency in *viva-voce* answers and special feats of memory. The Commission, after having adopted sundry unimportant modifications as to the mode of estimating the value of the different marks assigned by the examiners, was divided upon this particular point into two groups. It was finally decided by a majority that no account should be taken of scientific work done previously. The candidates were, however, allowed to send copies to the examiners, which, however, is the custom in any case. At present, therefore, there is this dilemma; if this work according to the ruling of the Commission does not count it is useless to send it in; if the examiners are influenced by it it they are acting unfairly. Complaints have been made in connexion with each of the two examinations which are at present being held—one to nominate professors in the Faculty of Medicine and the other to assign the gold medal to the best of the ex-house surgeons. It is stated that in each of these examinations the majority of the candidates withdrew after the first stage, so that there were only left before the examiners those candidates whose prospects of success were absolutely assured on account of their friendly relations with those gentlemen and also on account of the very high marks which they had consequently obtained. These allegations having been published in the newspapers the president of both examining bodies wrote a letter saying that as the examiners were chosen by lot it was a guarantee that no such injustice could occur and that, besides, the candidates who were supposed to be specially favoured had not been the only ones left before the examiners, but that others had been there too. Among the candidates there appears to be no mystery made in the matter at all, and it is said that as soon as the names of the examiners are known the names of the successful candidates are in everybody's mouth even before the examination begins. The voluntary withdrawal of the other candidates tends of show their belief that it would be quite useless for them to undergo the trouble of the examination. There is certain to be at the end of the examination a protest entered against the nominations made, as was the case ten years ago under similar circumstances. The Minister of Public Instruction has summoned a meeting of his predecessors in office and has decided that the present *concours* shall be the last. It is probable that for the future professors will be chosen by the Faculty on their merits.

The Bacillus of Acute Articular Rheumatism.

At the meeting of the Hospital Medical Society held on Christmas Eve MM. Triboulet and Coyon reported that they had made sundry researches in cases of acute rheumatism to see if they could find Achalme's bacillus in the blood. In every case they were able to isolate and cultivate a special kind of diplococcus completely different from the organism sought. Twice, however, they found this latter in association with the other and in each case the rheumatism was very severe and complicated. These observers also found this diplococcus in cultures made from a body which had upon post-mortem examination yielded Achalme's bacillus. It is an oblong coccus always occurring in pairs, about 2μ in diameter, to some extent anærobic and is not decolourised by Gram's method. Achalme's bacillus seems to accompany the graver forms of rheumatism and to be the special cause of complications. It is possible that this new diplococcus of Triboulet is the real microbe of rheumatism, always assuming that these interesting observations are not contradicted by subsequent research.

Medical Men at Rodez and Gratuitous Medical Relief.

The new regulations as to gratuitous medical relief in the country meet day by day with more resistance and the

medical men of Rodez have ceased to coöperate in this service since Jan. 1st. A joint letter addressed by them to the Prefect of Aveyron explains their attitude. With the view of avoiding the giving of trouble to the administration they say they accepted merely provisionally, and that alone for the year 1897, the regulations passed for gratuitous medical relief in the country despite its imperfections. They hoped that during the course of the year the local authority would carry into effect the just demands of the Medical Society of Aveyron. Their petition, however, was rejected.

A Case of Parasitism.

M. Laboulbène reported a case to the Academy of Medicine at their meeting on Jan. 4th which had occurred in the practice of M. Dubois. The patient, a man, suffered from incessant vomiting which resisted all treatment for fifteen days. He threw up curious little animals, a sort of amphipod crustacean, the Gammarus pulex. Three of these animals collected from the vomit and placed upon a piece of paper jumped about. The patient was seized with violent colic and after an emetic he brought up still more crustaceans. He was in the habit of drinking well water and also that of the Seine. He is now in good health. No similar case has been reported hitherto save one doubtful one recorded by van Beneden.

Jan. 11th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Recent Researches on Immunisation.

DR. WASSERMANN, assistant to Professor Koch, and Dr. Takaki, of Japan, have published an interesting article on immunisation in the *Berliner Klinische Wochenschrift* of Jan. 3rd. In an essay on diphtheria antitoxin Professor Ehrlich has suggested that infective diseases are due to the affinity of certain cells for the specific virus, tetanus, for instance, being the result of the tetanic virus entering into combination with the cells of the spinal cord. According to the same theory the substance of these cells, which he terms "toxofore Seitenketten" (toxoforic cells), is rendered soluble in the process of immunisation and enters into the circulation so that the antitoxin of tetanus consists only of the medullary cells in a soluble form. Dr. Wassermann concluded that if this theory of Professor Ehrlich were true the normal spinal cord must contain antitoxic substances and that it might therefore be possible to immunise an animal against tetanus by injections of spinal substance. Dr. Wasserman and Dr. Takaki having accordingly made an emulsion of the cerebral and spinal substance of healthy animals with the aid of a solution of sodium chloride, injected it together with tetanus toxin into white mice and succeeded in ascertaining the remarkable fact that the spinal and especially the cerebral substance both of the human subject and of guinea-pigs, rabbits, horses, &c., has a strong antitoxic action against the tetanus toxin. It neutralises the virus and will even save the life of an animal if injected several hours after inoculation with infective matter. Dr. Wassermann and Dr. Takaki are of opinion that the spinal and cerebral cells of the injected substance by their affinity for the tetanus toxin prevent it from invading the central nervous system. They propose to designate this new method of immunisation as "Seitenketten Immunität" and they point out that their researches, although of theoretical interest, do not seem to be available for practical use. The paper is accompanied by a detailed description of the experiments.

Mentally Defective School Children.

By special permission of the Berlin Municipal School Board four medical men, Dr. Kalischer, Dr. Moll, Dr. Neumann, and Dr. Teichmann, have examined a number of children who, although attending municipal schools, were incapable of following the usual course of instruction. Their report, published in the *Deutsche Medicinische Wochenschrift*, states that they visited ten selected schools and examined such children of the three lowest classes as had remained more than two years in the same class without passing to a higher one. Of 10 132 boys and girls attending the ten schools only 255 (= 2·5 per cent.) were examined. Prior to the examination the teachers filled up printed schedules containing the ages of the children, the time they had spent in each class, their diligence in school-work, their general behaviour and the social condition of their parents. The report states that the determination of the mental condition of the children was very difficult and in many cases involved a good deal of inquiry. Sometimes a condition of mental defect was indicated by the physiognomy and the demeanour of the children, but in other instances they had to be questioned on religion, natural phenomena, family affairs, school-life, &c., in order to ascertain their psychical state. Three degrees of mental deficiency could be distinguished—viz., backward children, weak-minded children, and complete idiots. The first category contained those whose mental functions were slow, their intelligence or memory being weaker than those of average children, but in whom a development by proper education might be expected. The second class contained those whose mental defects were obvious even to persons without medical training, the third class being reserved for those who were incapable of appreciating ordinary instruction and for whom no improvement was possible except perhaps by the methods followed in special asylums. In the result it was found that 116 children were mentally defective—viz., 1·5 per cent. of the whole number; 68 (= 0·7 per cent.) belonged to the first, 40 (= 0·3 per cent.) to the second, and 8 (= 0·08) to the third category; 5 idiots of thirteen and fourteen years of age were in the most elementary of the school classes, the average age of the pupils in this class being seven years. In a good many of these children organic bodily affections were present. Among 125 boys and 132 girls diseases of internal organs were detected in 76 per cent., affections of the nervous system in 10 per cent., difficulty of nasal respiration in 64 per cent., defects of speech in 5 per cent., defects of hearing in 35 per cent., and defects of sight in 19 per cent. The report states that many of the less intelligent pupils in whom neither mental nor bodily troubles were present would probably have answered the requirements of the school if the social condition of their parents had been better, but overwork at home made them incapable of learning much at school. The report recommends that idiots should be removed from the ordinary schools and placed in special asylums and that children who are the subject of moral perversions should be kept apart in order to protect others from their bad example. Backward or weak-minded children might continue to attend the ordinary schools, but special classes ought to be provided for them and the instruction adapted to their intellectual capacity.

Berlin University.

Berlin University has now more students than at any time since its foundation. The number was 5515 in the winter of 1896–97 and 4955 in the summer of 1897, but it has now risen to 5921. The distribution of the students in the various Faculties is as follows: theology, 448; law, 2000; medicine, 1291; and philosophy, 2182. To the number of medical students there must be added 268 pupils of the army medical school who have the same curriculum as the other students but are reckoned as military men and not as civilians.

Jan. 10th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

The Founder of Legal Medicine.

THE professor of medical jurisprudence in the Istituto di Studi Superiori of Florence, Professor Angiolo Filippi, has just completed the thirtieth anniversary of his election to the chair which he has made one of the most popular as well as scientific in Italy. In celebration of the event his pupils, past and present, have conceived the happy thought of making it coincident with the publication of a monograph on Dr. Paolo Zacchia who, in the words of the latest and perhaps (since Hirsch) the most accomplished of medical historians, Dr. Julius Pagel of Berlin, "hat die Bedeutung dass er als der eigentliche Begründer der gerichtlichen Medizin anzusehen ist" (has the distinction of being regarded as the true founder of legal medicine). The treatise itself, entitled "Quaestiones Medico-Legales in quibus omnes ene Materiae Medicae quae ad Legales Facultates videntur pertinere, proponuntur, pertractantur, resolvuntur" (Medico-Legal Inquiries, in which all those medical matters seemingly within the province of the Faculty of Law are set forth, handled, and resolved), consists of seven books and saw the light first in Rome in 1621 and

last in Venice in 1737, though between those dates it ran through many editions in Germany, France and Holland. Besides his "Bahn-brechend" work in medical jurisprudence Dr. Zacchia has other claims to commemoration. As Dr. Pagel says, he was skilled in all the science of his time; was a man of letters, a poet, "ein geschickter Maler" (a clever painter), and "ein tüchtiger Kenner der Musik" (dexterous, proficient in music). Body physician to Pope Innocent X., his historical position and importance more than entitled him to the honour he now receives at the conjoint hands of Dr. A. Severi, Professor of Legal Medicine at Genoa, and Dr. A. Montalti, Dr. L. Borri, Dr. G. G. Perrando, and Dr. C. Biondi, lecturers on the same subject in the Palermitan, Florentine, Genoese, and Neapolitan schools respectively. The monograph on its own account is so interesting that it ought to inspire others on similar lines—it should form, indeed, the first of a series on "the leaders of Italian medicine" in which such teachers as Acquapendente and Cesalpino, such consultants as Baglivi and Scarpa, and such investigators as Morgagni would receive their long postponed meed of honour. As to Professor Filippi himself, whether as lecturer in the academic chair or as expert in the witness-box or as the author of some seventy treatises and minor essays in legal medicine, he well deserves the jubilee celebration just accorded him, having for thirty years fulfilled as a teacher the *rôle* he never lost sight of even in his undergraduate days when he fought for his country's unity and independence under Garibaldi in 1859–60, when again in 1865 he did philanthropic work in the cholera epidemic, and when finally, just before settling down to the business of his life, he distinguished himself under Victor Emanuel in 1866 on the field of Custoza.

Influenza in the Curia.

As we near the close of winter and advent of spring influenza ceases to be sporadic and tends to assume epidemic proportions. Within the last few days there has been an ominous increase of cases—notably in the Trastevere and among the members of the Sacred College. Of these venerable ecclesiastics now in Rome very few have escaped the disease; in some it has declared itself with a gravity which is really alarming. Much uneasiness is felt as to the condition of at least four "Eminentissimi"—to wit, Cardinal Parocchi (the vicar of Rome), Cardinal Agliardi (sometime Nuncio at Vienna), Cardinal Oreglia (dean of the Sacred College), and Cardinal Mertel, who is dean by seniority, being now in his ninety-fourth year. As to the Pontiff himself he has so far escaped the malady, but that, in view of its prevalence in the Apostolic College, his physicians are watching him from day to day, or even from hour to hour, with unrelaxed vigilance goes without saying.

The "Istituto Sieroterapico" of Milan.

Like its elder sister "the Istituto Antirabico" this institute has a yearly growing record of prosperity. At the last sitting of its directors it was announced that for 1897 the sale of anti-diphtheritic serum was double that for the year preceding, having realised a sum of 80,000 lire (£3200). The "vaccino anti-carbonchioso" was also in greatly increased demand, as many as 100,000 doses of it having been dispensed for the smaller cattle. The "Istituto," moreover, has developed a new and much-needed branch of activity—producing in any quantity "vaccino animale antivaioloso" (anti-variolous animal vaccine) and thereby contributing to the gratifying result that for a series of months Milan has not witnessed a single case of small-pox, a disease formerly endemic in the city.

Jan. 9th.

CONSTANTINOPLE.

(FROM OUR OWN CORRESPONDENT.)

The Imperial School of Military Medicine.

LAST Sunday the ceremony of distribution of diplomas to the students of the Imperial School of Medicine who finished their course of study this year took place. Amongst the high officials present was Marshal Zéki Pacha, Grand Master of the Artillery and General Director of the Military Schools. All the members of the Faculty attended the ceremony. Marshal Zévi Pacha delivered an address suited to the occasion. Before receiving their diplomas students were asked to take the oath of faithfulness to the Throne and the Government. After the ceremony these young doctors, wearing the uniform of captain, were conducted to the Ministry of War. The number of students who received their diplomas last Sunday was sixty-six, of whom fifty-six were Mussulmans, seven Israelites, and three Greeks. It may be noted that Armenian students have always figured prominently on similar occasions in the years gone by, whereas no names of Armenian graduates are to be seen in the present list: the explanation will be clear to the readers of the lay press.

Botany.

Mr. Aznavour, a young Armenian, has lately sent a valuable communication to the Botanical Society of France part of which has been published in its *Bulletin*. The same work has also been published in a separate little volume which is worthy of perusal by all lovers of botany. It deals with the plant life in and about Constantinople. Botanists may look forward with anticipation to the larger volume which the same author, I understand, is about to bring out soon. So far as I know this is the first attempt of systematic study of the plant life of this neighbourhood and the young author is to be congratulated on the results of his laborious task.

Calculi in the Urethra.

At the last meeting of the Imperial Society of Medicine, Dr. Zartarian, surgeon to the Armenian National Hospital, read an interesting paper on a case in which urethrotomy was performed. Dr. Zartarian said that calculi were often found in the urethra after the operation of lithotomy or to other local causes. The patient, a boy, aged fourteen years, had an unfortunate fall, and the wound he had thus received was badly cicatrised, a state of things which had favoured the formation of the calculi in the urethra. An operation of urethrotomy was thought to be necessary. The operation had been quite successful. Dr. Zartarian extracted two enormous calculi, one of which was no less than six centimetres and the other three centimetres long, and the two had a thickness of about two centimetres. The two together weighed twenty-five grammes.

Dec. 24th, 1897.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

The Charities of Victoria.

ALMOST all the charitable institutions in Victoria are involved in debt and their system of management and maintenance is anything but satisfactory. Some years ago a Royal Commission was appointed to report on the condition of the charities of the colony and the best methods of making them more efficient. The inquiries of this body brought to light the facts that there is an excess of institutions with no systematised relations between them, so that while some are half empty others are overfilled, and that the main burden of maintenance falls on the central Government, which provides £100,000 per annum, while a comparatively small number of private individuals voluntarily contribute, with some help from municipal corporations, about £38,000. Neither the Government nor the municipalities are represented in the management. The Charities Commission made a number of recommendations which have been for the most part incorporated in a Bill now being discussed in the Legislative assembly. Briefly the proposals are to divide the colony into five districts, each with a local charities board of nine members, elected by the municipalities, and a central charities board consisting of a delegate from each local board and of four members nominated by the Government. The central board is to receive the funds and apportion them among the local boards, who would distribute them among the charities of each district. Funds are to be raised by the municipalities who can levy a charities rate or otherwise not exceeding 1½*d.* in the £, the amount that can be so raised being estimated at £70,000 per annum. In addition it is proposed to put a tax of 5 per cent. on all prizes and gate-money at races and sports and to give to the board the yearly surplus of the fees derived from publicans' licences—about £9000. The accumulated surplus of the licensing fund (about £40,000)

is to be applied to liquidating the existing liabilities of the charities. The Bill also gives power to compel an inmate in any charitable institution to pay 10*s.* a week for maintenance if able to do so and if not power to recover that amount from the father, mother, husband, wife, brother, sister, or child of any inmate. The Bill has already met with much criticism and opposition. The municipalities object to what is practically a Poor-law system and to further imposition of taxes; the present governing bodies of charitable institutions also object to the multiplication of boards and are afraid that the provisions of the Bill will destroy the present system of voluntary contributions, while a large number of the general public objects to the tax on sports.

Tuberculosis in New South Wales.

The New South Wales Board of Health is evidently determined to do all it can to stamp out tuberculosis in the colony. A case of tuberculosis in a dairy recently came under notice and the President of the board (Dr. Ashburton Thompson) availed himself of the opportunity of making a report on the whole subject. The veterinary inspector of the board informed Dr. Thompson of a glaring case of tuberculosis in a dairy herd. Dr. Thompson inspected the cow and condemned it and after death it was found to be riddled with tubercle. As it must have long been ill it was thought probable that the other cows had become infected. They were injected with tuberculin and six reacted. These were condemned, slaughtered, and proved to be tuberculous. The dairyman's licence was cancelled and his premises were disinfected. The dairyman said he would send the condemned carcass to be boiled down. It turned out, however, that the carcass was sent to a poultry farmer who used it to feed his poultry. In his report Dr. Thompson observes that "the prevention of that part of the incidence of consumption in mankind which is due to eating meat and milk produced by consumptive beasts is inextricably bound up with the prevention of this disease among herds. All dairymen, butchers, and breeders must be able to buy under a guarantee of freedom from tuberculosis," as shown by the tuberculin test applied under fixed conditions.

Medical Advertising.

Dr. J. R. Wolfe, of Melbourne, on whose proceedings THE LANCET commented some time ago, has again been bringing his name before the public in unprofessional ways, and not only so, but writing to the public press to justify his conduct. He says, "The conventional rule of reporting medical cases, in the first instance at any rate, in medical journals, followed up by discussion of medical men, is a wise arrangement, as it is intended to protect the public against false and exaggerated reports by pretenders. This, however, presupposes that the guardians of the public interests are themselves honest and fair—honourable gentlemen, whose only aim is truth and who have no shop interest to serve. But what if the custodians themselves be influenced by jealousy fierce as Hades, are they then more likely to give truer information to the public than the editors of lay journals who have no private interests to serve? ..... Medical men are subject to the domination of a kind of secret police—are treated as babies whom they wish to keep all their lives in swaddling-clothes."

The Perth Water-supply.

Typhoid fever has been, and is, excessively prevalent in Perth, West Australia. Samples of the drinking water supplied to the town have been forwarded to the Pathological Laboratory, Melbourne University, for bacteriological examination, and the results of Dr. Cherry's investigations show that the water is positively contaminated with sewage and probably with typhoid bacilli. That is to say, he found colonies of an organism resembling the typhoid bacillus in every respect but in its growth on potato, and a series of control experiments with genuine typhoid bacilli kept for a long time in water showed a gradation between the "invisible growth" of fresh typhoid and the slightly creamy growth of the organisms in the Perth water. Dr. Cherry concludes that the evidence in favour of the identity of this organism with the typhoid bacillus is practically conclusive.

Action against a Dentist.

On Nov. 23rd a Sydney dentist was sued for £300 for unskilful treatment. It was alleged that during the extraction of teeth under an anæsthetic matter from a tooth had been allowed to escape into the air passages, setting up an abscess in the lung which eventually ended fatally. Medical evidence was called for the defence and the witnesses said there was nothing in the treatment described showing any negligence whatever. The jury found for the defendant.

Inter-colonial Medical Congress.

The next meeting of the Inter-colonial Medical Congress of Australasia will be held in Brisbane in 1899. Several preliminary meetings have been held in Brisbane to make necessary arrangements. Dr. John Thomson is the president-elect. A general committee has been appointed and also an executive committee consisting of the president, treasurer, two general secretaries, and fifteen members, five elected by the Medical Society of Queensland and five by the Queensland branch of the British Medical Association and five to be chosen from the profession of the colony. The Hon. Dr. W. F. Taylor, M.L.C., has been elected honorary treasurer and Dr. David Hardie and Dr. Wilton Love general secretaries.

Unproved Charge of Perjury against a Medical Man.

On November 19th Mr. T. H. Strangman, of Seymour, Victoria, was tried at the Criminal Court on a charge of perjury and was acquitted. The case arose out of a police prosecution at Seymour when Mr. Strangman was summoned for riding a bicycle on the footpath and in his evidence on oath stated that previous evidence given by the police was "distinctly and decidedly false." This statement the police alleged to be perjury and hence the criminal charge which the police failed to prove to the satisfaction of the jury.

Alleged Improper Appointment at Prince Alfred Hospital, Sydney.

The appointment of Mr. Charles MacLaurin, M.B. Edin. to the position of honorary assistant surgeon at the Prince Alfred Hospital, Sydney, has given rise to questions in the Legislative Assembly and members stated that there was a feeling of dissatisfaction with reference to the appointment which was looked upon as a job and that the best man had not been appointed. Dr. Charles MacLaurin is the son of the Chancellor of the University and the appointment was made by the directors of the hospital and the University Senate, and it was said that it was the first time the Senate had exercised its prerogative of jointly making such appointments. It was stated by Dr. Graham, who is a member of the Assembly and a director of the hospital, that applications were called for in the usual way and that Dr. MacLaurin's qualifications were the highest and consequently he was appointed.

Formation of New Medical Societies.

A branch of the British Medical Association has been formed at Launceston, Tasmania, and a new association, the Western Districts Medical Association, has been formed at Bathurst, New South Wales.

Nov. 23rd, 1897.

THE CHEMICAL NUISANCE AT CRUMPSALL.—A deputation from the Manchester and the Prestwich Boards of Guardians waited on the Sanitary Committee of the Manchester Corporation on the 22nd ult. to ask that "something should be done" to put a stop to or abate the nuisance said to be caused "by the emission of noxious fumes from chemical works in the Crumpsall district." It was stated that the health of the inmates of both the Crumpsall and Prestwich workhouses is very seriously affected by the nuisance. This is an old and sore subject. Mr. Alderman Walton Smith promised that the representations of the deputation should be "carefully considered." At the meeting of the Manchester Guardians on the 29th ult. Mr. Harrop, one of the deputation, said that he believed the committee would stop the nuisance if they could. The deputation were asked if they would take the initiative, which they declined to do as the law was in the hands of the corporation. But this body had the disagreeable experience of being beaten in 1892, when they prosecuted the firm believed to provide the nuisance, and are naturally somewhat diffident in taking action now unless there are more substantial hopes of success.

Obituary.

ERNEST HART, M.R.C.S. ENG., D.C.L. DUNELM.,

EDITOR OF THE "BRITISH MEDICAL JOURNAL."

WE are much indebted to a member of the staff of the *British Medical Journal* for the following sympathetic memoir of his late chief.

Mr. Ernest Hart, Editor of the *British Medical Journal*, died on Jan. 7th in Brighton, whither he had gone a few months ago for the benefit of his health. It had long been known to his friends that he was the subject of glycosuria, but it was not until within the last two or three years that his health began seriously to fail. A voyage to the West Indies early in 1897 failed to produce the improvement in his general health which he had usually derived from the sea, of which he was passionately fond. In the early summer he had a recurrence of herpes, from which he had previously suffered. On this occasion the foot was the part attacked and a local sphacelus formed. Early in September, on the advice of Mr. Bryant and Dr. Mitchell Bruce, he submitted to amputation of the leg. The operation, which was performed by Mr. Lockwood, was immediately successful, but the wound was slow in healing and the sudden deprivation of activity acted injuriously on Mr. Hart's spirits. It was however hoped that he was gaining ground at Brighton, whither he travelled as soon as he was able to move after the operation. On Jan. 6th his general condition became somewhat suddenly worse and he died in the early hours of Jan. 7th, retaining his consciousness and courage to the last.

Ernest Hart was born in London in 1835. His father was a dentist in practice in the West of London and gave his son a good education. He went first to the City of London School, then under the headmastership of the Rev. Dr. Mortimer who did so much to raise its reputation. He looked upon Ernest Hart as one of his most brilliant pupils. Legend relates that two cabs were once required to carry away all the prizes that Hart gained, and it is certain that he matched himself with success against no less a person than the boy who was afterwards famous as Sir John Seeley. He might have gone up to Cambridge with a scholarship, but the disabilities under which Jews then laboured in the older universities stood in his way and he determined to enter the medical profession. He joined Lane's School attached to St. George's Hospital and in due course became a Member of the Royal College of Surgeons of England in 1856. It may be mentioned here that he never sought any other diploma nor any academic distinction though in 1893 he received the honorary degree of D.C.L. from the University of Durham.

During his student career Mr. Hart showed the natural bent of his genius and perhaps discovered his own powers as an organiser by taking an active part in the formation of a students' society to seek the redress of serious grievances under which the medical department of the Royal Navy then laboured. The popularity of the service had reached the lowest ebb when a society of medical students was formed with Mr. Timothy Holmes as chairman and Mr. Ernest Hart as secretary. The movement was quickly successful, the ear of Parliament was gained, and the Naval Medical Service was re-organised on a new basis which conceded many reforms.

Ernest Hart's first appointment was that of resident medical officer to St. Mary's Hospital to which he was nominated in 1856. In 1861 he was appointed ophthalmic surgeon to St. Mary's Hospital and lecturer on ophthalmology. He engaged in the practice of general surgery with a special leaning to diseases of the eye, and was for a time associated with the late Mr. Walter Coulson (senior) in his city practice, though he at the same time practised independently as a consulting surgeon. In 1863 he became dean of St. Mary's Hospital Medical School, and in 1865 the duties of aural surgeon were added to the others which he already discharged at that hospital. He resigned his surgical offices in 1868, and that of dean in 1869.

From a very early stage of his career, however, he had shown a strong bent towards journalism, and in 1858, when he was only twenty-three years of age, he joined the staff of THE LANCET. In 1866 when Dr. Markham, the then editor of the *British Medical Journal*, was appointed a Medical Inspector under the Local Government Board Mr. Hart became editor in his room and at once threw himself with immense energy into the work of rendering that journal a more efficient and influential exponent of medical science and opinion. His own personal interest lay mainly from an early period in matters connected with Public Health, and his power of usefulness was very greatly enhanced by his appointment in 1872 to be chairman of the Parliamentary Bills Committee of the British Medical Association, a position which he retained down to a few months ago, continuing to discharge its duties after his resignation of the office last spring until the election of his successor, Dr. R. Farquharson, M.P. To give a complete history of the work he did as chairman of the committee would be impossible, for it is safe to say that no question affecting the public health or the interests of the medical profession escaped investigation during the quarter of a century for which he held office.

By a coincidence one of the first matters which this committee after its re-constitution in 1871 had to undertake was an investigation of the grievances which still existed in the Naval Medical Service. A report on the questions involved was drawn up by Mr. Ernest Hart and served as the basis of the representations made by a deputation which waited on the First Lord of the Admiralty. As a result a Royal Warrant was issued in 1875 granting many concessions relating to rank, pay, and retirement. Other matters which still required improvement remained under consideration and further representations resulted in the issue of another Royal Warrant in 1881. Contemporaneously with these efforts on behalf of the Naval Medical Department was the commencement of the long struggle for improvement in the terms of service and status of officers of the Army Medical Department. Lord Camperdown's Committee sat in 1889 and Mr. Hart had a large share in the marshalling of the facts to be laid before it. As a result of the report of this Committee the Royal Warrant of 1891 was issued admitting the substantive rank of army medical officers and granting compound titles in indication thereof. These titles have not in practice been found satisfactory, but it is hoped that before long the efforts which have been made on behalf of the Army Medical Staff may be crowned with success.

Another subject to which Mr. Hart gave much attention was that of baby farming. He took great pains to collect evidence and was the first witness called before a Select Committee appointed by Government; as a consequence of its report the Infant Life Protection Act of 1872 was passed. Experience of the working of this Act, which from the first appeared to Mr. Hart and those who had been most actively engaged in its promotion to be defective, proved that their prognostications were correct. He again drew attention to the matter through the Parliamentary Bills Committee and in other directions and finally the Act which came into force on the first day of this year was enacted.

The Public Health Act of 1875 recognised the importance of the notification of infectious disease, but left it to local corporations in applying for private bills to state in what manner they proposed to carry out notification. There was a risk that the whole onus should be placed upon the medical attendant. Mr. Hart directed special attention to this point and in the Infectious Diseases Notification Act, 1889, the important principle of the concurrent responsibility of the head of a family in which infectious disease occurred was fully recognised.

The subject, however, which most deeply interested Mr. Hart was that of the part which drinking water played in the dissemination of certain diseases, especially cholera and typhoid fever. As early as 1865 he had taken part in an investigation for THE LANCET of the limited outbreak of cholera at Theydon Bois in Essex, and in the following year he was much impressed by the results of an investigation of an outbreak of cholera in East London which was traced to the distribution of water from the River Lea which had become specifically polluted. Throughout the rest of his life he was a careful student of all outbreaks and epidemics of cholera and typhoid fever which have occurred in this country in connexion with public water-supplies. He was one of the first to become impressed with the fact that milk might under certain circumstances become the vehicle for the distribution of the infection of typhoid fever, and he read a paper before the International Medical Congress in London (1881) on the Influence of Milk in Spreading Zymotic Disease. This paper contained an account of seventy-three outbreaks of typhoid fever,

scarlet fever, diphtheria, and sore-throat which he attributed to the agency of milk. He continued to maintain an interest in the subject, and in 1897 published a further report containing an account of forty-eight further outbreaks which had occurred in the interval since 1881. In the same way he continued to maintain an interest in the question of the dissemination of typhoid fever by water-supplies and not long ago prepared a report for the Parliamentary Bills Committee of the British Medical Association on Water-Borne Typhoid. This, which was published in 1897, contained a historic summary of local outbreaks in Great Britain and Ireland from 1858 to 1893, together with a tabular analysis of 205 epidemics. The very strong views which he held as to the frequency and importance of the specific contamination of water-supplies as the cause of epidemics of cholera and typhoid fever led him to take a deep interest in questions connected with Indian sanitation, and he gave forcible expression to these views during the visit to India to which reference is made below.

He was chairman of the National Health Society from 1877 to 1896 and sought, not without success, to reach through it classes of the public not readily amenable to the influence of medical opinion. The society organised lectures on public health addressed to lay audiences, arranged courses of lectures addressed especially to the working classes on personal and domestic hygiene, and undertook the duty of training teachers to work under the county councils. The Smoke Abatement Institute grew out of the work of this society. He took a large part in organising the Smoke Abatement Exhibition and was chairman of the Smoke Abatement Committee which in 1883 presented a report on Appliances for the Prevention of Contamination of the Air by Smoke. The report sufficiently showed that the nuisance might be removed or at least very greatly diminished could the public be induced to make use of good appliances. That a greater effect upon the atmosphere of London and great cities has not been produced was in his opinion in large measure due to the fact that the chief offenders are the small domestic kitchen ranges.

Mr. Hart was an ardent defender of vaccination and in 1880 he published an essay entitled "The Truth about Vaccination," which dealt with all the serious objections brought against the practice. In 1879 he promoted a conference in London to which he presented a report on the results of vaccination from the calf in various countries. The conference was attended by Dr. Warlomont, of Brussels, and Mr. Hart remained a strong advocate of calf-vaccination. It has long been in use in London at certain stations, and it is probable that its employment will shortly be greatly extended.

With regard to Mr. Ernest Hart's personal character and the aims and motives by which he was actuated we cannot do better perhaps than quote the words spoken by a close and sympathetic friend, the Rev. Canon Barnett, at the memorial service held on Jan. 11th at Marylebone Parish Church. In the course of his address Canon Barnett said: "Each of us is thinking of some aspect of Ernest Hart's character which drew our admiration or affection. One remembers the ardent intellect which burnt up difficulties, another the masterly ordering of facts; for some he is the keen fighter who fought for his side with sharpest weapons; one will think of the strong critical power which dissected and tossed to ridicule worn-out traditions; another will think of the love of beauty which so enriched his home, his garden, and his talk, and made him so anxious to increase the open spaces of London. He is known to the world as a leader, but he is known to many unknown as a sympathiser with misfortune, as a generous helper of the fallen, as a friend who, put his best at a friend's service ..... But there was one side of Ernest Hart's character known to all. He was a man of public spirit; from the beginning of his career he took up causes. His ambition was to leave the world cleaner, happier, and better than he found it, and in the pursuit of that ambition he never hesitated to face the prejudices of his peers. He made some enemies and some mistakes, but they were made because he conceived that his first duty was not to his class but to the public. Men of public spirit are the salvation of our country—there are many in England but there are far too few."

Though a Londoner he always had a great love for the country and in his best days was fond of exploring the home counties on horseback in company with his wife or a congenial friend. He had a curious knowledge of many little known picturesque districts within easy reach of London and took much pleasure in recounting his expeditions and urging others to follow in his footsteps. Later, foreign travel to some extent took the place of this recreation. He visited Italy, Tangier, Spain, and then, taking a longer flight, he travelled round the world and gratified his love of Japanese art by visiting that country. He returned by Canada, where he took part in the formation of several Branches of the British Medical Association and stirred up an interest the outcome of which was seen in the recent annual meeting in Montreal; at which he was, owing to failing health, to his great disappointment, unable to be present. Another journey, in 1894, was made to India and Burmah. While in India he attended the meeting of the first Indian Medical Congress and delivered an address on Indian Sanitation which hit a good many nails on the head and raised a storm of mingled praise and blame. Some of his expressions were interpreted as casting reflections on the Indian medical service, but his intention was undoubtedly to show that that splendid service was undermanned and was trammelled by obsolete regulations and by the traditional policy of the Indian Government. He visited Hyderabad and there delivered an address to a large meeting of Mahomedans, appealing to them to take steps to minimise the risk which the followers of Mahomed incur during the Mecca Pilgrimage. His crusade in India undoubtedly had a great influence in arousing the Government of India to the necessity of taking greater advantage of the improved methods of preventing and checking epidemic diseases with which medicine has recently been endowed by the advance of pathology and bacteriology. Of his tour in Burmah, Mrs. Ernest Hart, his companion on all these journeyings, has recently given some account in her book on Picturesque Burmah.

The memorial service was attended by Sir William MacCormac, Bart., President of the Royal College of Surgeons of England, Dr. Holman, Vice-President of the British Medical Association, representing Dr. Saundby, President of Council, who was unavoidably absent, Dr. Parsons, Treasurer, and Dr. Cleveland, Mr. George Eastes, and Brigade-Surgeon-Lieutenant-Colonel Drake-Brockman, members of the Council of the British Medical Association; the Medical Sickness, Annuity, and Life Assurance Society, of which Mr. Hart was the founder, was represented by Dr. de Havilland Hall. Among the chief mourners were Mrs. Hart, Mrs. Barnett, Mr. Kiesh representing Miss Hart.

The pall-bearers were Sir Henry Thompson, Sir Ernest Clarke, Mr. George Smith, Dr. Stephen Mackenzie, Mr. Francis Fowke (General Secretary of the British Medical Association), Dr. Dawson Williams (Assistant Editor of the *British Medical Journal*), and Mr. Stephen Hyam and Mr. Sydney Rowland (nephews).

To this able account of the career of Mr. Ernest Hart we desire to add a few words concerning his connexion with THE LANCET. He was introduced to the late Mr. Thomas Wakley, the founder of THE LANCET, by a Dr. Wright whose failing health in 1856 compelled him to resign his position as a member of the staff. Dr. Wright brought Ernest Hart to the office as his possible successor, and discounted all objection that might be raised on the score of his young friend's age by saying boldly: "He's the cleverest youngster in London," and bidding Hart show his testimonials. Among these testimonials was one from the headmaster of the City of London School stating that Ernest Hart was the most capable lad whom he had ever educated and was captain of the school at an age two years junior to that of any previous captain. Ernest Hart had also a great record as a prize-winner at his medical school and was at once given a place upon our staff. His duties as defined by the agreement which lies before us were threefold: (1) to write leading articles to order; (2) to write in the editorial style on topics selected by himself, but subject to the Editor's approval; and (3) to take charge of the columns devoted to the reporting and discussion of medico-Parliamentary affairs. In every department he acquitted himself to the satisfaction of the Editor. In 1863 Mr. Ernest Hart was employed by Dr. James Wakley, who had succeeded his father as Editor of THE LANCET, in the "reading and correcting of proofs" and in "assisting in the literary departments of the journal"—to quote the words of the second agreement which also lies before us; and we

have always supposed that it was some imperfect recollection of the terms of this document that originated the rumour which we have so often found it necessary to contradict, that Mr. Ernest Hart was once "co-editor" of THE LANCET. His duties were the usual duties of the literary assistant, and he discharged them with alacrity and ability. In December, 1864, and early in 1865, two tragedies occurring in the infirmaries of certain London workhouses, the Editor of THE LANCET held an inquiry into the management of these institutions. His able commissioners included Dr. Francis Edmund Anstie, afterwards editor of the *Practitioner*, Dr. Carr, of Greenwich, and Mr. Ernest Hart, who were aided in their labours by Dr. Joseph Rogers; and their investigations when published in THE LANCET produced a profound impression upon the public and eventually resulted through the medium of the Workhouse Infirmaries Association (of which Ernest Hart was honorary secretary) in a revolution of the existing law. In 1866, for reasons of a purely private nature, Mr. Ernest Hart's connexion with THE LANCET was suddenly severed, and it would be idle to pretend that relations for some time afterwards between him and the proprietors of THE LANCET were otherwise than hostile. But time has obliterated these feelings, and we should not have referred to the matter at all if certain of our contemporaries had not dwelt a little unduly upon it. Mr. Ernest Hart was a good friend, a bitter foe, and a brilliant journalist. He was not "co-editor" of THE LANCET for the excellent reason that Dr. James Wakley was quite competent to look after the journal by himself, but he was an admirable coadjutor. The world has lost in him a man of energy, enterprise, and public spirit, and we desire to record our unmistakeable sense of the loss.

AUGUSTIN PRICHARD, M.D. BERL., F.R.C.S. ENG., L.S.A.

BY the death of Mr. Augustin Prichard which occurred at his residence in Chesterfield-place, Clifton, on Jan. 5th, Bristol loses one of its oldest, most respected, and distinguished members of the medical profession. Mr. Prichard was born in Bristol, being the second son of the late Dr. James Cowles Prichard, the famous ethnologist. In 1834, when sixteen years of age, the deceased was apprenticed for five years to his uncle, Mr. J. B. Estlin, the surgeon, and founder of the Bristol Eye Dispensary. After serving this apprenticeship and studying at Bristol Medical School and Infirmary, he went to St. Bartholomew's Hospital, London, where he was dresser to Sir William Lawrence. He took the M.R.C.S. Eng. and L.S.A. in 1840, passing the examination for the F.R.C.S. Eng. in 1849. In 1841 Mr. Prichard went to Berlin, where he graduated as M.D., and also studied at Vienna and Paris. In 1842 he commenced practice in Bristol, and soon became connected with the medical school as lecturer on surgery and anatomy, in 1849 he was elected surgeon to the infirmary, and there his clinical teaching attracted a large number of students. He was compelled by a regulation now abolished to resign this post after twenty years' service. After this he was busily occupied in private practice and especially in ophthalmic work and was frequently called in for consultation in all parts of the west of England. Mr. Prichard was an active member of the council of the local branch of the British Medical Association and at two of the annual meetings of this association he read the address in surgery. The deceased was one of the founders of the Bristol Medico-Chirurgical Society and was surgeon to Clifton College from the time of its foundation. In 1893 he retired from practice and the remaining years he spent in congenial pursuits, although he never lost his interest in medical matters. Mr. Prichard was the author of several surgical papers and recently had written a book of medical and surgical reminiscences. On Dec. 20th Mr. Prichard developed symptoms of intestinal obstruction which necessitated an operation and although this was attended with great temporary relief he sank on Jan. 5th from exhaustion. The deceased, who was in his eightieth year at the time of his death, leaves four sons and three daughters. Two of his sons are medical men, one being senior surgeon to the Bristol Infirmary. Mr. Prichard will be much missed in Bristol not only amongst members of the profession but by all his fellow citizens, to whom he had endeared himself by his interest in every good work.

ARTHUR GEORGE BLOMFIELD, M.D. ABERD., M.R.C.S. ENG., L.S.A.

DR. A. G. BLOMFIELD died from the effects of an overdose of morphia at his residence, West Southernhay, Exeter, on Jan. 8th. Deceased, who was forty-three years of age, received his medical education at Aberdeen University and King's College, London, graduating M.D. of Aberdeen in 1882, having previously taken the M.R.C.S. Eng. and L.S.A. in 1878 and 1877 respectively. He was for three years house surgeon to the West Norfolk and Lynn Hospital and for six and a half years held a similar post at the Devon and Exeter Hospital, which he resigned in 1887 and since then had been engaged in active practice in Exeter. Dr. Blomfield was physician to the Devon and Exeter Hospital, the Exeter Dispensary, West of England Institute for the Deaf and Dumb, and to the Exeter Lying-in Charity. The deceased was highly esteemed in the city and much sorrow is felt at his early death.

At the inquest held on Jan. 10th medical evidence showed that Dr. Blomfield had lately suffered from influenza with depression and insomnia and that death was due to an overdose of morphia or laudanum. The coroner said that the case was a sad one as the deceased was greatly respected and was rising rapidly in his profession. A verdict of "Death from misadventure" was returned.

PROFESSOR GREGORY ANTONOVITCH ZAKHARIN.

UNTIL quite recently few names were better known in the medical profession in Russia than that of Professor Gregory Antonovitch Zakharin, whose death which occurred on the evening of Dec. 23rd (Jan. 4th) we announced in our last issue. For thirty-five years he occupied the chair of Clinical Medicine in the University of Moscow and during the greater part of that period he had probably the largest and certainly the most lucrative consulting practice not only in Moscow but in the whole Russian empire. Report (always to be accepted with reserve) attributed to him the making of a colossal fortune. He certainly commanded exceptionally large fees and numbered among his *clientèle* some of the wealthiest families in Russia. But his reputation will rest on much more solid grounds than this. He had unusually keen powers of diagnosis and was wonderfully successful in treatment. As a teacher he will long be remembered. During his extended professional career he counted among his pupils an uncommonly large number of men destined to attain high distinction in the medical world of Russia. He has, moreover, left a permanent memorial of his labours in a large and valuable series of clinical lectures, the first two volumes of which were published in 1894 and the remaining two in the following year. Outside his own country he will best be remembered as the physician who attended the late Czar, Alexander III., in his last illness. The Imperial patient, it will be recalled, contracted influenza in the early part of 1894 and shortly afterwards developed symptoms of Bright's disease. Professor Zakharin attended him until his removal to Spala in the late summer months, when, the symptoms becoming more pronounced, he summoned Professor Leyden, of Berlin, in consultation. The further course of the illness and the rapid decline and death of the patient at Livadia in the Crimea will be fresh in many minds. The post-mortem examination, it may be added, confirmed in every detail the diagnosis formed by Professor Zakharin and Professor Leyden. Rumour, however, began to be busy about this time and on very slender grounds, or more probably on no grounds at all, charged the late Professor with having failed to diagnose in time the renal complications which were popularly supposed to have supervened immediately on the attack of influenza. From that time his reputation certainly declined somewhat and he shortly after resigned his chair in the University of Moscow. But on this part of his career we do not choose now to dwell nor on the unfortunate series of incidents which made the "Zakharin question" one of the burning questions of the day

in the inner life of that University. The late Professor was in his sixty-ninth year at the time of his death. He was born in the south of Russia in 1829 and was educated at the Saratof Gymnasium. In 1854 he obtained his doctor's degree in the University of Moscow in which he had spent his curriculum and of which he was destined to be for many years one of the most brilliant and successful of professors. His fatal illness was of very short duration. He was seized with cerebral apoplexy on Dec. 19th (31st) and never rallied, succumbing four days later.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. G. Allexianu, Professor of Medical Pathology in Bucharest.—Dr. Harrison Allen, Emeritus Professor of Physiology in the University of Pennsylvania, Philadelphia.—The Count Motta Maia, Professor of Anatomy and of Operative Medicine in the University of Rio de Janeiro.—Dr. Giacomo Sangalli, Professor of Pathological Anatomy in the University of Pavia.—Dr. Karl Ritter von Rgehazek, formerly Professor of Surgery in the University of Graz. He died on Christmas Day and was in his eighty-first year.—Dr. Brissez, Honorary Sargeon to the Lille Hospitals.—Dr. Gaston Le Mercier, Medical Officer of the Havre Hospitals.—Dr. Filippo Lussana, Emeritus Professor of Physiology in the University of Padua.—Dr. Multanovski, *privat-docent* in Surgery in the St. Petersburg Medico-Chirurgical Academy.—Dr. Kirkpatrick, Lecturer on Surgery in the McGill University, Montreal.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—The following candidates at the Primary Examination have passed in the subjects indicated:—

PART I.

Biology.—G. M. Crockett, K. A. Dawson, A. Kellgren, M. E. Martin, F. Murray, and L. G. Simpson, Royal Free Hospital; and H. O. Sutcliffe, Cambridge.

Chemistry.—J. B. Bradley, Birmingham; and A. M. Dodd and F. D. D. Ledgard, Royal Free Hospital.

Materia Medica and Pharmacy.—M. A. Alabone, Guy's Hospital; A. H. Bell, Cork and Guy's Hospital; W. M. McLoughlin, University College Hospital; J. Notley, Birmingham; and G. E. Saltau, Royal Free Hospital.

PART II.

Anatomy.—A. J. Beardmore, Sheffield and Middlesex Hospital; J. H. Beasley, Birmingham; A. A. F. Clarke, St. Thomas's Hospital; W. A. C. Cox, St. Mary's Hospital; M. Foley, Royal Free Hospital; A. W. H. Grant, Charing Cross Hospital; G. H. L. Hammerton, Sheffield; H. L. Hands, Madras; D. T. Cadvan Jones, University College Hospital; E. MacD. Judge, Guy's Hospital; A. J. Kennedy, Edinburgh; W. L. Norwood, Royal College of Surgeons, Ireland; and C. V. Smith, University College Hospital.

Physiology.—W. P. Allen, Birmingham; A. J. Beardmore, Sheffield and Middlesex Hospital; J. H. Beasley, Birmingham; A. A. F. Clarke, St. Thomas's Hospital; W. A. C. Cox, St. Mary's Hospital; M. Foley, Royal Free Hospital; H. L. Hands, Madras; D. T. Cadvan Jones, University College Hospital; E. MacD. Judge, Guy's Hospital; A. J. Kennedy, Edinburgh; C. J. Marsh, University College Hospital; W. L. Norwood, Royal College of Surgeons, Ireland; and L. Sells, St. Thomas's Hospital.

UNIVERSITY OF LONDON.—At the B.S. Examination for Honours the following candidates have been successful:—

Surgery.—First Class: *Brennan Dyball, St. Thomas's Hospital; *Charles Herbert Fagge, Guy's Hospital; and †Edwin Josiah Toye, B.Sc., St. Bartholomew's Hospital. *Second Class:* Arthur Henry Evans, Westminster Hospital; Alfred Lucette Home, St. Thomas's Hospital; and John Dill Russell, University College and London Hospital. *Third Class:* Cuthbert Henry Jones Lockyer, Charing-cross Hospital; Hugh Percy Noble, Middlesex Hospital; and Alfred Walter Sikes, B.Sc., St. Thomas's Hospital.

* Gold medal and moiety of scholarship.

† Obtained the number of marks qualifying for a gold medal.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. Bernhard Fränkel has been promoted to an Honorary Professorship of Laryngology and Rhinology, Dr. Benno Baginsky has been granted the title of Professor of Oto-Rhinology, Dr. L. Jacobson that of Professor of Otology, Dr. Heinrich Bonhoff that of Professor of Hygiene, and Dr. Carl Günther that of Professor of Bacteriology.—*Breslau:* Dr. Richard Stern has been granted the title of Professor of Internal Medicine.—*Catania:* Dr. Raimondo Feletti has been promoted to the Ordinary Professorship of Medical Pathology.—*Cracow:* Dr. Charles Zulawski has been promoted to an Extraordinary Professorship of Psychiatry.

DINNER TO THE MAYOR OF CHELTENHAM.—A complimentary dinner was given on Jan. 1st at Cheltenham to Mr. Richard Rogers, L.D.S. Irel., to commemorate his recent election as mayor of that town for the third time. Baron de Ferrières presided.

TYPHOID FEVER AT CAMBORNE.—The number of cases of typhoid fever in Camborne and the district is stated to be about 150 and up to the present four deaths have occurred, but fortunately several of the cases are of a mild character. The Local Government Board Inspector (Dr. Bruce) has arrived and will investigate the cause of the outbreak.

A MEDICAL OFFICER OF HEALTH FOR SOMERSETSHIRE.—At a meeting of the Somersetshire County Council held on Jan. 4th a member asked for a committee to be appointed to consider the desirability of the appointment of a medical officer of health for the county. It was eventually decided that the matter should be referred to a special committee of seven members.

A CHEQUE for £10,000 was recently presented to the Leicester Infirmary as a Jubilee endowment to the institution. The amount was raised by Jubilee subscriptions at the instance of Mr. Marshall who is ex-mayor of the borough and has been largely increased by the proceeds of a bazaar promoted by the Duchess of Rutland, the Countess of Warwick, Mrs. de Lisle, and other ladies, as well as by increased subscriptions.

ROYAL INSTITUTION.—On Tuesday next (Jan. 18th) Professor E. Ray Lankester, F.R.S., will begin a course of eleven lectures on the Simplest Living Things; on Thursday (Jan. 20th) Professor Dewar, F.R.S., will deliver the first of a course of three lectures on the Halogen Group of Elements; and on Saturday (Jan. 22nd) Professor Patrick Geddes will begin a course of three lectures on Cyprus. The Friday evening meetings of the members will be resumed on Jan. 21st when Sir John Lubbock, Bart., M.P., will deliver a discourse on Buds and Stipules. At a meeting of the managers held on Jan. 6th Professor E. Ray Lankester, F.R.S., was elected Fullerian Professor of Physiology.

BRISTOL HEALTH COMMITTEE.—At the meeting of the Bristol Health Committee held on Jan. 5th a report was presented by Dr. D. S. Davies on the administration of the extended city and alluding to the appointment of an assistant medical officer of health. The chairman stated that in 1897 £492 was paid for medical attendance beyond that which their medical officer of health could furnish and added that it would be worth while for the committee to consider whether part of the duties of the assistant medical officer should not be to take over the attendance on all patients in their isolation hospitals. In the result Dr. Davies was instructed to prepare a further report upon the appointment.

FREEMASONRY.—*Rahere Lodge, No. 2548.*—A meeting of the Rahere Lodge was held at Frascati's Restaurant on Jan. 11th, 1893. Bro. A. R. Kay, B.A. Oxon, was elected a joining member. Dr. James Morrison was initiated into Freemasonry by W. Bro. W. J. Walsham, F.R.C.S. Eng., the W.M. Bros. Auden, Bill, Cripps-Lawrence, John Adams, Westbrook, and Trechmann were admitted to the third degree. A grant of £21 from the lodge funds was made to the British Medical Benevolent Fund.—*Sancta Maria Lodge.*—At a meeting of the Sancta Maria Lodge held at Mark Mason's Hall on Jan. 10th, W. Bro. Edmund Owen being in the chair, the following brethren were admitted to the second degree: J. P. B. Wills, M.B. Durh.; W. J. Harris, M.D. Camb.; H. S. Collier, F.R.C.S. Eng.; G. Murray; A. Thorne, M.B. Lond.; H. A. Kidd, M.B.; W. G. Ridewood, D.Sc.; R. P. Smallwood, M.B. Camb.; and W. R. Powers. The following gentlemen were initiated into Freemasonry: C. A. Morgan, M.B. Edin.; F. E. Easton; H. G. Lawrence; and R. J. E. Hanson.

THE LONDON TEMPERANCE HOSPITAL, HAMPSTEAD-ROAD, N.W.—A new aseptic ward was opened by the Right Hon. the Lady Battersea on Tuesday, Jan. 11th last.

MEDICAL GOLF TOURNAMENT.—In reference to the golf handicap open to qualified medical men which we announced in our last issue as about to be arranged the following are the conditions. The local rules of green to hold good, the competitors to be notified of result of each draw. The first draw will take place on Monday, the 24th inst. Each couple must arrange the time and place of their match (providing green be within thirty miles of London if one party so wish); about a fortnight to be allowed for completion of each round. Intending competitors to send name, address, and lowest handicap with entrance fee (5s.) to the honorary secretary, Rosedene, Windlesham, Surrey, on or before the 22nd inst. Committee: Mr. Ernest Clarke, Dr. W. R. Dakin, Mr. C. T. Dent, Mr. Howard Marsh, Dr. Laidlaw Purves, Sir Thomas Smith, Bart., Mr. F. C. Wallis, and Mr. Rolf Creasy, honorary secretary.

A SUSSEX SANATORIUM.—A new sanatorium at High Grove (East Grinstead Urban District) was publicly opened on Thursday, Jan. 6th, and on Monday last patients were transferred from the fever ward at the workhouse to the new buildings. The sanatorium consists of two ward blocks, an administrative block, laundry—with which is connected a Thresh's disinfector—and coach and ambulance houses. The wards are plainly built with stock bricks and red brick facings and have slate roofs. The windows are carried up to within six inches of the ceiling, thus permitting of an abundance of air. Nurses' duty rooms separate the patients' quarters and the floors throughout are of wood blocks. There are twelve available beds, but arrangement is made for an increase in this number should an epidemic necessitate augmentation of accommodation. The administrative building is so constructed as to provide accommodation for extra nurses. The administrative expenses are shared by the urban and rural authorities and the latter authority is erecting a sanatorium on land contiguous to the urban buildings. The urban wards are named "Victoria" and "Alexandra." Mr. James Harrison, M.R.C.S. Eng., L.R.C.P. Edin., has been appointed the medical superintendent. The many sanitary authorities in Sussex would be wise to follow the excellent example set by the East Grinstead Urban District Council.

DIPHTHERIA IN LONDON.—The amount of diphtheria recorded in London during the December four-weekly period ended on Jan. 1st was less than that for the November period of similar length ended on Dec. 4th. In the November period the notified cases of the disease amounted to 1119, with successive weekly totals of 279, 301, 287, and 252, yielding a weekly average of 280, whereas in the December period the aggregate was 1064, with weekly figures of 294, 277, 212 and 281, and a weekly average of 266. But it will be seen that no sustained weekly decline has been recorded in the later period, the Christmas week alone showing any notable decrease in certified cases. In both periods all save one of the sanitary areas of London were invaded. In November and December alike eight districts had respectively 50 attacks or upwards, amounting in November to 513 and in December to 515 cases. In the former period 8 other districts had only 31 cases among them and in the later period a similar number of areas had only 30 attacks notified in all. The 198 registered deaths of November, yielding a weekly average of 49, gave a case mortality rate of 17·7 per cent. But December witnessed the registration of 230 deaths, a weekly average of 57 and a case mortality of 21·6 per cent. The weekly totals of the December period were 58, 63, 56 and 53 respectively. In the Outer Ring the registered deaths in the successive weeks of the two periods have been 26, 11, 14, and 15 in November, in all 66; and in December, 20, 16, 17 and 13, amounting to 66 also. Last week, being the first week of the current registration year, there were registered in London 50 deaths from diphtheria, a number 3 in excess of the corrected decennial average for the particular week. Islington is credited with 6 of these deaths, Paddington and Hackney each with 4, and Bethnal Green, Stoke Newington, and St. George Southwark respectively with 3 deaths. In the Outer Ring the registered deaths from the disease numbered 15, of which 5 were in West Ham district, and 4 in Bexley sub-district.

PRESENTATION TO A MEDICAL MAN.—Mr. Edward Picton Phillips, M.R.C.S. Eng., L.S.A., Surgeon-Lieutenant-Colonel of the Pembrokeshire Volunteers, was entertained at dinner on Dec. 29th and presented with his portrait in oils, a barograph, and an illuminated address to commemorate the fiftieth year of his practice in Haverfordwest.

A GENERAL HOSPITAL FOR BARRY.—The Hospital Committee of the Barry District Council have resolved that a site of not less than five acres shall be obtained for the purposes of a general hospital for Barry and that an accident ward, with accommodation for twenty-four beds, shall be provided forthwith, this building to be in accordance with a block plan capable of enlargement at any time. Mr. G. Neale, L.R.C.P. and S. Edin., J.P., Mr. J. Powell, L.R.C.P. and S. Edin., and Mr. J. Livingstone, M.D., C.M. Glasg., were appointed a sub-committee to visit several towns and report upon their hospitals.

BRISTOL WORKHOUSE.—Mr. R. H. Norgate, L.R.C.P. Lond., M.R.C.S. Eng., the resident medical officer of the Bristol Workhouse, in his annual report presented to the Bristol Board of Guardians states that 110 deaths had occurred in the institution during 1897, as against 102 in 1896. Of these 77 per cent. were in persons over fifty years of age and 2 were in children under one year. Seven cases of typhoid fever and 3 of diphtheria had been nursed in the infirmary wards and in the fever hospital 25 cases of erysipelas, 41 of scarlet fever, 1 of influenza, 2 of chicken-pox, and 11 of measles had been treated. Of these 90 cases 3 of erysipelas and 1 each of scarlet fever and typhoid fever had ended fatally.

LUNACY IN SOMERSETSHIRE.—At the meeting of the Somerset County Council held last week it was reported that £154,000 had been spent on the Cotford Asylum up to the present and it was estimated that the total cost would be about £170,000. The number of patients at Wells Asylum was stated to be 293 males and 505 females; total, 798. Cotford Asylum has 183 males and 122 females; total, 310. It was reported to the council that the sub-committee were not prepared to discontinue the use of margarine, as at the present prices of margarine and butter the difference of cost in the year's consumption would be over £800 and there was no evidence to show that the use of margarine was in any way injurious to the patients.

NORTH OF ENGLAND GYNÆCOLOGICAL AND OBSTETRICAL SOCIETY.—A meeting of this society was held at Owens College, Manchester, on Dec. 12th, 1897, Dr. Briggs (Liverpool), the President, being in the chair.—Dr. Arnold Lea (Manchester) read the notes of a case of Strangulated Parovarian Cyst causing Intestinal Obstruction and showed the specimen together with microscopic sections. The patient, a multipara, aged forty-two years, was seized whilst stooping with intense pain in the left side of the abdomen. The pain continued for several days and in spite of treatment the bowels did not act. Abdominal section was performed five days after the onset of symptoms. The tumour was found to be a parovarian cyst occupying the right broad ligament. This had rotated through a quarter of a circle on the uterine attachment of the broad ligament as an axis and lay in front of the uterus, sigmoid flexure and first part of the rectum, to which it was attached by numerous recent adhesions. The cyst was dark coloured but not gangrenous. It was rapidly removed. The patient progressed very favourably for twenty-four hours, passing flatus twelve hours after operation. She then began to have very profuse alvine evacuations and died in an hour. The necropsy revealed no hæmorrhage or signs of general peritonitis. The cause of death appeared to be collapse following the rapid emptying of the intestines.—Dr. Fothergill (Manchester) read a paper on the Pathology of Certain Uterine Flexions and Versions which he considered should not be treated by any direct attempt to straighten or replace the organ. When the symptoms dated from one or other of the accidents incident to reproduction the flexions or versions discovered on examination were secondary results of a primary cause which should be discovered and removed. Thus the common condition of anteflexion with retroversion due to old utero-sacral cellulitis should not be diagnosed as "displaced uterus" but as "old cellulitis" and treated accordingly.

WORTHING WATER-SUPPLY.—At a meeting of the Worthing town council on the 5th inst. the chairman of the Highways Committee (Councillor Walter) moved that application be made to the Local Government Board for sanction to borrow the sum of £2750, the estimated cost of covering in the new reservoir at the waterworks. After some discussion the proposition was agreed to. At the same meeting the Mayor read a letter from the Mayor of Maidstone who in acknowledging the fact that Worthing had contributed nearly £420 to the Maidstone Relief Fund added, that for their generous and sympathetic contributions they had evoked the grateful thanks of himself and the whole of the burgesses of Maidstone.

FEES FOR RE-VACCINATION AT CIRENCESTER.—At a meeting of the Cirencester Board of Guardians, held on Jan. 3rd, a letter was read from the Local Government Board stating that as re-vaccination had been performed by the guardians on children under ten years of age for which there was no provision out of the public funds the amount paid for the operation should be refunded to the guardians. The guardians being unwilling to ask the surgeons, who acted under their instructions, to refund the money decided to write to the Local Government Board and explain that the re-vaccinations were performed during the time of the Gloucester epidemic and the precautions of the guardians were so successful that only two imported cases of small-pox occurred in the district.

NEWPORT MEDICAL SOCIETY.—A meeting was held at the Newport Infirmary on Jan. 5th, the President, Mr. O. E. B. Marsh, being in the chair.—Mr. W. Basset showed an interesting case of Tumour of the Spleen.—A discussion afterwards took place on the question of Hospital Reform, with special reference to the recent unpleasantness at the Newport Infirmary, when the following resolution was unanimously carried:—"That this meeting of the Newport Medical Society, having heard particulars of the disagreement between the directors of the Newport Infirmary and Mr. Ensor, considers that his original action was taken in the interests of the institution as well as of the general medical profession and that he has been harshly dealt with by the directors in their not having invited him to explain his actions before summarily dismissing him from his appointment."

THE PRINCE OF WALES'S HOSPITAL FUND.—Donations from this Fund have been awarded to the following hospitals—namely: The Middlesex Hospital has received £2925, of which £1925 is a special donation in honour of Her Majesty's Diamond Jubilee and £1000 as a subscription.—The New Hospital for Women, Euston-road, £192 10*s*.—The National Hospital for the Paralysed and Epileptic (Albany Memorial), Bloomsbury, £752 10*s*. in honour of Her Majesty's Diamond Jubilee and a subscription of £750 towards the financial deficiency. The Hospital for Sick Children, Great Ormond-street, £1200, of which £700 is a special donation for the year and £500 towards opening a whooping-cough ward.—The Royal Sea-Bathing Infirmary, Margate, £297 10*s*., a special donation for the year.—The Charing-cross Hospital, £2066 5*s*., of which £1006 5*s*. is a special donation and £1000 to the General Fund.—The Royal London Ophthalmic Hospital, Moorfields, £490.—The Dental Hospital of London, Leicester-square, £109 7*s*. 6*d*.—The University College Hospital, Gower-street, £2581 5*s*., of which £1400 is allocated towards keeping open at least 25 out of the 50 beds recently closed.—The North-Eastern Hospital for Children, Hackney-road, Shoreditch, £262 10*s*.—The Queen Charlotte's Lying-in Hospital, Marylebone-road, £201 5*s*.—The Chelsea Hospital for Women, Fulham-road, £306 5*s*.—The Royal Hospital for Diseases of the Chest, City-road, £350.—The Seaman's Hospital Society (*Dreadnought*), £918 15*s*.—The City of London Hospital for Diseases of the Chest, Victoria-park, £927 10*s*.—The Royal Orthopædic Hospital, Oxford-street, £61 5*s*.—The North London Consumption Hospital, Fitzroy-square, and Mount Vernon, Hampstead, 250 guineas.—The Hampstead Hospital, Parliament Hill, 125 guineas.—The London Hospital, £8937 10*s*., of which £3937 10*s*. is a special donation.—The St. Mary's Hospital, Paddington, £2706 5*s*., of which £1706 5*s*. is a special donation for the year.—The Great Northern Central Hospital, Holloway-road, £481 5*s*. as a special donation.

DORSETSHIRE COUNTY NURSES' HOME.—At a meeting of the Provisional Committee held recently at Dorchester it was unanimously resolved that the proposed county home for trained nurses should be founded with headquarters at Dorchester and a branch at Blandford. Lord Ilchester was elected president and Sir R. Glyn chairman.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, TINDALL AND COX., King William-street, Strand, London.
The Diagnosis of Disease. By J. P. Parkinson, M.D. Lond. 1898. Price 4*s*. net.
Premature Burial: Fact or Fiction? By David Walsh, M.D. Edin. 1897. Price 1*s*. 6*d*. net.
Lectures on the Theory and Practice of Vaccination. By Robert Cory, M.A., M.D. Cantab, F.R.C.P. Lond. 1898.

BIGGS AND CO., Salisbury-court, Fleet-street, London.
Sewer Gas and its Influence upon Health. Treatise by H. Alfred Roechling, C.E. 1898. Price 5*s*.

BLACK, A. & C., Soho-square, London.
Cairo of To-day: A Practical Guide to Cairo and its Environs. By E. A. Reynolds-Ball, B.A., F.R.G.S. With Maps and Plan of Cairo. 1898. Price 2*s*. 6*d*.

CASSELL AND CO., London.
The Practitioner. Edited by Malcolm Morris. Old Series, Vol. LIX., New Series, Vol. VI.; July to December, 1897.

DIGBY, LONG AND CO., Bouverie-street, Fleet-street, London.
The Latest Fruit is the Ripest. The Sequel to "Perfect Womanhood." By Fred J. Gant, F.R.C.S.

HODDER AND STOUGHTON, Paternoster-row, London.
A Doctor of the Old School. By Ian Maclaren. Illustrated. 1897. Price 2*s*. 6*d*.

JENKINS, WM. R., New York.
Practical Toxicology. By Dr. R. Kobert. Translated and edited by L. H. Friedburg, Ph.D. Authorised edition.

LEWIN, THOS., AND CO., Castle-street, Berners-street, London.
International Clinics. Edited by Dr. J. Daland, Dr. Bruce, and Dr. Finlay. Seventh Series. 1897-98. Vol. II. 1897. Price 12*s*. 6*d*. net.

LONGMANS, GREEN, AND CO., Paternoster-row, London.
An Elementary Course of Practical Organic Chemistry. By F. C. Garrett, M.Sc., and A. Harden, M.Sc. 1897. Price 2*s*.
The Essentials of Experimental Physiology. By T. G. Brodie, M.D. 1898. Price 6*s*. 6*d*.

OFFICE OF THE SUPERINTENDENT OF GOVERNMENT PRINTING, Calcutta, India.
Archæological Survey of India. New Imperial Series. Vol. XXII.
The Bower Manuscript. Edited by A. F. R. Hoernle, Ph.D. Parts 3 to 7. 1897.

THE REBMAN PUBLISHING COMPANY, Adam-street, Strand, London.
A Text-book of the Practice of Medicine. By James M. Anders, M.D. Ph.D., LL.D. Illustrated. Two vols. 1898. Price 36*s*.

THE JOHNS HOPKINS HOSPITAL PRESS, Baltimore.
The Johns Hopkins Hospital Reports. Vol. VI. 1897.

WOOD, WM., AND CO., New York.
Insanity. By G. Fielding Blandford. Reprint. 1897.

Transactions of the American Surgical Association. Vol. XV. Edited by De F. Willard, A.M., M.D., Ph.D. (Wm. J. Dornan, Philadelphia, 1897.)—Transactions of the American Climatological Association for the year 1897. Vol. XIII. (Printed for the Association, Philadelphia, 1897.)—Supplement to the Queensland Government Gazette of the Registrar-General's Report on the Vital Statistics of the Registry District at Brisbane for the month of October, 1897.—The Cyclist's Pocket-book. (Archibald Constable and Co., Whitehall-gardens, Westminster, 1898.)—Health and Beauty. (Published by S. F. Goss, Oxford-street, London.)

Appointments.

Successful Applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.*

BALLANCE, H. A., M.S. Lond., F.R.C.S. Eng., has been appointed Assistant Surgeon to the Norfolk and Norwich Hospital.

BENNETT, H. P., M.B., C.M. Edin., has been appointed Assistant Surgeon to the Northumberland, Durham, and Newcastle Infirmary for Diseases of the Eye.

BURTON, S. H., M.B. Lond., B.S., F.R.C.S., has been appointed an Honorary Surgeon to the Norfolk and Norwich Hospital.

BUSH, JAMES PAUL, M.R.C.S., L.S.A., has been appointed Senior Surgeon to the Bristol Police.

CORMICK, FRED. B., M.B., C.M. Glasg., has been appointed Visiting Assistant Medical Officer to the Newcastle-on-Tyne Dispensary.

DICKSON, T. G., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer of Health by the Hay Urban District Council.

EDWARDS, C. W., L.R.C.P. Lond., M.R.C.S., has been appointed a Medical Officer to the East Grinstead Cottage Hospital.

EDWARDS, H. N., L.R.C.P. Edin., M.R.C.S., has been appointed Medical Officer for the Flamsted Sanitary District of the Hemel Hempstead Union.

HARDIKER, W. A., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Prior's Marston District by the Southam Board of Guardians.

HARKER, W. E., M.D. Durh., B.S., has been re-appointed Medical Officer for the River Tyne Port Sanitary Authority.

JOHNSON, CHARLES HENRY, M.R.C.S., L.S.A., has been re-appointed Medical Officer for the No. 4 District of the Basingstoke Union.

JONES, HUGH T., L.R.C.P. Irel., M.R.C.S., has been re-appointed Medical Officer of Health by the Hucknall-Torkard Urban District Council.

JONES, R. LLEWELYN, M.B. Lond., L.R.C.P., M.R.C.S., has been appointed Medical Officer to the Durham County Asylum.

MACKENZIE, W. M., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for Raunds, Thrapston.

MATHESON, J. COLIN, M.B., C.M. Glasg., has been appointed Resident Medical Officer to the Westminster General Dispensary, Gerrard-street, Soho, W., vice Lionel Smith, resigned.

MIRZA, AHMED, M.B., C.M. Edin., has been appointed Medical Officer of Health to the Chaderghat and City of Hyderabad Municipalities.

RICHMOND, J. R. M., L.S.A., has been appointed Medical Officer of Health by the Overton Rural District Council.

ROBERTSHAW, W. M., M.B., C.M. Edin., has been re-appointed Medical Officer of Health by the Stocksoridge Urban District Council.

SCOTT, H. A., M.B., Ch.B. Vict., L.R.C.P., M.R.C.S., has been appointed Third Assistant Medical Officer to the Mounsall Fever Hospital, Manchester.

THOMSON, H. CAMPBELL, M.D., M.R.C.P. Lond., has been appointed Physician to Out-patients at the Hospital for Epilepsy and Paralysis, Regent's-park, London.

WALLIS, CHARLES EDWARD, M.R.C.S., L.R.C.P., L.D.S., has been appointed Dental Surgeon to the Victoria Hospital, Chelsea.

WARD, W. F., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Blyth Sanitary District of the Worksop Union.

WAY, MONTAGUE H., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Assistant House Surgeon to Guy's Hospital, London.

WHITAKER, E. T., M.B., C.M. Edin., has been appointed Medical Officer of Health by the Blymhill Rural District Council.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ANCOATS HOSPITAL, Manchester.—Resident Junior House Surgeon. Salary £50, with board and washing.

BRIXTON DISPENSARY.—Resident Medical Officer for two years, unmarried. Salary £150, with furnished apartments, attendance, coal, and gas. Applications to the Secretary, Water-lane, Brixton, S.W.

CHILDREN'S HOSPITAL, Nottingham.—House Surgeon (non-resident) for six months. Salary at the rate of £100 per annum.

DORSET COUNTY HOSPITAL, Dorchester.—House Surgeon for twelve months, unmarried. Salary £70. To reside and board in the hospital. Applications to Mr. W. E. Groves, Valetta, Icenway, Dorchester.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY, Dumfries.—Assistant House Surgeon. Board and washing provided.

FINSBURY DISPENSARY, Brewer-street, Goswell-road, London.—Resident Medical Officer. Annual appointment. Salary £100 per annum, and a furnished residence provided in the institution, with attendance, coals, and gas.

FLINTSHIRE DISPENSARY.—Resident House Surgeon. Salary £120 a year, with furnished house, rent and taxes free; also coal, light, water, and cleaning, or in lieu thereof £20 per annum. Applications to the Secretary, Board-room, Bagillt-street, Holywell, North Wales.

HERTFORD UNION.—Medical Officer and Public Vaccinator for the Second and Third Districts. Salary, Second District, £29 16s. and £50 for Third District, exclusive of the remuneration fixed by the central authority for all extra cases. Applications to Mr. T. J. Sworder, Clerk, Hertford.

HOSPITAL FOR WOMEN, Soho-square, London.—Clinical Assistants.

LONDON COUNTY ASYLUM, Hanwell.—Junior Assistant Medical Officer. Salary £150 per annum, with board, furnished apartments, and washing. Applications to the Clerk of the Asylums Committee, 21, Whitehall-place, S.W.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST.—Resident Medical Officer at Bowdon, Cheshire. Salary £60 per annum, with board, apartments, and washing.

MERCER'S HOSPITAL, Dublin.—A vacancy on the Surgical Staff.

ROYAL HOSPITAL FOR CHILDREN AND WOMEN, Waterloo-bridge-road, London, S.E.—Anæsthetist and Registrar, non-resident. Salary £45 per annum.

SHEFFIELD ROYAL HOSPITAL.—Senior Assistant House Surgeon, unmarried. Salary 70 guineas per annum, with board (exclusive of wine and beer) and lodging.

SUNDERLAND AND NORTH DURHAM EYE INFIRMARY, Sunderland.—House Surgeon. Salary £100 per annum, out-door.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL, Wolverhampton.—Assistant House Surgeon for six months. A small honorarium given, with board and washing.

Births, Marriages, and Deaths.

BIRTHS.

CHAMBERS.—On Jan. 9th, at The Priory, Roehampton, S.W., the wife of James Chambers, M.D., of a son.

DOUGLAS.—On Jan. 5th, at Central-hill, Norwood, S.E., the wife of John J. Douglas, M.D., of a son.

FERGUSON.—On Jan. 6th, at Woodland-road, New Southgate, the wife of R. Bruce Ferguson, M.A., M.D. Cantab., &c., of a son.

GOARD.—On Jan. 8th, at Elm-grove-road, Exeter, the wife of T. Arthur Goard, L.R.C.P., M.R.C.S., L.D.S., of a son.

MARCH.—On Jan. 6th, at St. John's House, Lechlade, Glos., the wife of J. Ogdin March, M.R.C.S., L.R.C.P., of a daughter.

ROBERTSON.—On Jan. 10th, at Alton-road, Roehampton, S.W., the wife of A. Milne Robertson, M.D., of a son.

ROBINSON.—On Jan. 2nd, at The Villa, Harleston, Norfolk, the wife of J. C. Reynolds Robinson, M.R.C.S., L.R.C.P., of a daughter.

SMYTH.—On Jan. 3rd, at Castle-acre, Adelaide-road, Brockley, S.E., the wife of F. Sydney Smyth, F.R.C.S., of a son.

WATSON.—On Jan. 11th, at Hendre, Overton-park, Cheltenham, the wife of Deputy Surgeon-General George Alder Watson, Bengal Army (retired), of a son.

WILLIAMS.—On Jan. 5th, at Tayside, Broughty Ferry, N.B., the wife of Surgeon-Captain C. E. Williams, I.M.S., of a daughter.

MARRIAGES.

BRERETON—LAMB.—On Jan. 5th, at St. James's, Birkdale, Frederick Sadleir Brereton, Army Medical Staff, youngest son of F. S. Brereton, Esq., of Catford, Kent, to Ethel Mary Lamb, only daughter of W. J. Lamb, Esq., of Birkdale.

DICKSON—FARRAR.—On Jan 12th, at St Mary's Church, Crumpsall, Manchester, by the Rev. R. Catterall, Rector, Thomas Graeme Dickson, L.R.C.P. and L.R.C.S. Edin., of Hay, Breconshire, eldest son of F. K. Dickson, J.P., F.R.C.P. Edin., of Buxton, to Elizabeth Lister Farrar (Bessie), eldest daughter of T. Lister Farrar, of Manchester, solicitor.

KING—BOND.—On Jan. 4th, at Christ Church, Bath, Preston King, M.D., son of W. Norman King, Esq., J.P., of Bury St. Edmunds, to Margaretta Baring (Greta), daughter of the late Rev. F. H. Bond, of Barry-hill, Bilton.

WILES—MILES.—On Jan. 5th, at St. Mary Abbott's, Kensington, Julius Wiles, Deputy Surgeon-General, to Katharine Hamilton, daughter of the late Frederick Miles, formerly of Upper Hamilton-terrace.

DEATHS.

BRADBURN.—On Jan. 4th, at Fair Home, Leamington, James Denham Bradburn, M.R.C.S., F.R.C.P. Edin., eldest son of the late James Bradburn, of Monk's Hall, Eccles, aged 46 years.

HENTSCH.—On Jan. 5th, at Coldharbour-lane, Brixton, S.W., John Page Hentsch, M.R.C.S., L.S.A., aged 55 years.

HUNT.—On Jan. 8th, at 16, Francis-road, Birmingham, Joseph Hunt, M.R.C.S., aged 49 years, late of 29, Temple-row, Birmingham.

JACKSON.—On Jan. 11th, at Park Lodge, Ivor Heath, Robert Jackson, M.D.

PARE.—On Dec. 28th, 1897, at 25, Buckland-crescent, N.W., of influenza and pneumonia, Margaret Edmonson Pare, the dearly loved wife of John William Pare, M.D., C.M. Edin., L.D.S.

PRICHARD.—On Jan. 6th, at Chesterfield-place, Clifton, Augustin Prichard, M.D., F.R.C.S., aged 79 years.

SELBY.—On Jan. 2nd, at Poona, India, of heart disease, Henry Covernton Selby, B.A., M.B. Cantab., younger son of Thomas M. Selby, of Stanton Bury, Bucks, aged 30 years.

STANLEY-ADAMS.—On Jan. 10th, at "The Elms," Spring-grove, William Stanley Stanley-Adams, M.D., C.M.

TIGHE.—On Jan. 10th, John Joseph Mark Tighe, physician and surgeon, eldest son of John Malachi Tighe, 8, Belvidere-place, Dublin, at his residence, 37, Shaftesbury-street, London, N.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (17th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.).

TUESDAY (18th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.).

WEDNESDAY (19th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.).

THURSDAY (20th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.).

FRIDAY (21st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.).

SATURDAY (22nd).—Royal Free (9 A.M. and 2 P.M.), Middlesex, (1.30 P.M.) St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Cancer (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

TUESDAY (18th).—PATHOLOGICAL SOCIETY OF LONDON.—8.30 P.M. Dr. Voelcker: Ulceration of a Caseous Gland into the Bronchus, Death from Asphyxia.—Dr. H. B. Robinson: A Papilliferous Cyst of a Sudoriparous Gland from the Axilla.—Dr. Drysdale: The Blood from a Case of Pemphigus.—Mr. C. B. Lockwood: Stricture of the Small Intestine causing Intestinal Obstruction and Perforation.—Mr. F. C. Wallis: (1) A piece of Intestine removed by Enterectomy; (2 A Case of Appendicitis.—Mr. A. W. Addinsell: A Case of Appendicitis with Suppuration of the Right Suprarenal Capsule.—Dr. Freyberger: An anomalous Truncus Brachi-cephalicus associated with Aortic Disease and Symptoms Simulating Aneurysm.—Mr. Furnivall: An unusual Cyst of the Tongue.—Mr. A. G. R. Foulerton: Cystic Dilatation of the Vermiform Appendix.

WEDNESDAY (19th).—ROYAL METEOROLOGICAL SOCIETY (Institution of Civil Engineers, Gt. George-street, Westminster, S.W.).—7.30 P.M. Ordinary Meeting. 7.45 P.M. Election of Officers and Council. Mr. E. Morley (President): Weather Influences on Farm and Garden Crops.

NORTH-WEST LONDON CLINICAL SOCIETY (North-West London Hospital).—8.30 P.M. Monthly Demonstration of Clinical Cases.

ROYAL MICROSCOPICAL SOCIETY (20, Hanover-square, W.).—8 P.M. The President will read his Annual Address.

THURSDAY (20th).—SOCIETY OF ANÆSTHETISTS (20, Hanover-square, W.).—Discussion on Resuscitation in Emergencies under Anæsthetics (opened by Dr. Wilson).

HARVEIAN SOCIETY.—8.30 P.M. Annual Meeting. 9.30 P.M. Conversazione.

FRIDAY (21st).—EPIDEMIOLOGICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8.30 P.M. Dr. C. Childs: The History of Typhoid Fever in Munich.

LECTURES, ADDRESSES, DEMONSTRATIONS, ETC.

TUESDAY (18th).—WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM (73, Welbeck-street).—4.30 P.M. Dr. D. Grant: Cases of Ménière's Disease and other Forms of Vertigo.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Bloomsbury).—3.30 P.M. Dr. R. Russell: A Pathological Demonstration of Cerebral Tumours.

CITY ORTHOPÆDIC HOSPITAL.—5.30 P.M. Mr. J. Poland: Deformities of Bones after Injury.

GRESHAM COLLEGE (Basinghall-street, E.C.).—6 P.M. Dr. E. Symes Thompson: Climate and Diseases of Greater Britain.

SOCIETY OF ARTS.—4.30 P.M. Mr. F. Villiers: My Recent Journey from the Nile to Souakim.

ROYAL INSTITUTION.—3 P.M. Prof. E. Ray Lankester: The Simplest Living Things.

WEDNESDAY (19th).—WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Mr. J. B. Ball: Cases in the Throat Department.

GRESHAM COLLEGE (Basinghall-street, E.C.).—6 P.M. Dr. E. Symes Thompson: Tropical Fevers.

SOCIETY OF ARTS.—8 P.M. Mr. E. S. Bruce: The Projection of Luminous objects in Space.

CLINICAL MUSEUM (Park-crescent, Regent's-park).—4 P.M. Mr. Hutchinson: New Year's Address, being a Summary of the Year's Work at the Museum. Demonstration of Cases.

THURSDAY (20th).—CHARING-CROSS HOSPITAL.—4 P.M. Mr. Stanley Boyd: Surgical Cases in the Wards.

SOCIETY OF ARTS (Imperial Institute, South Kensington).—4.30 P.M. Right Hon. Sir M. E. G. Duff: Recreations of an Indian Official.

GRESHAM COLLEGE (Basinghall-street, E.C.).—6 P.M. Dr. E. Symes Thompson: Malaria and its Microbes (illustrated by microscopic lantern demonstration).

ROYAL INSTITUTION.—3 P.M. Prof. Dewar: The Halogen Group of Elements.

FRIDAY (21st).—ROYAL INSTITUTION.—9 P.M. Right Hon. Sir John Lubbock: Buds and Stipules.

GRESHAM COLLEGE (Basinghall-street, E.C.).—6 P.M. Dr. E. Symes Thompson: Rare Diseases of the Tropics.

SATURDAY (22nd).—ROYAL INSTITUTION.—3 P.M. Prof. P. Geddes: Cyprus.

Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICE.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND, WHEN ACCOMPANIED BY BLOCKS, IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICE.

THE INDEX TO THE LANCET.

THE Index to Vol. II. of 1897, which was completed with the issue of Dec. 25th, and the Title-page to the Volume, were given in THE LANCET of Jan. 1st.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1897 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

"SUPPOSED CONVULSIONS."

THE following extract from a local paper has been sent to us by a correspondent who vouches for its accuracy and wishes for our opinion as to the wisdom of dispensing with an inquest:—

> "The infant child of Mr. William Curtis, of Church-street, died in bed on Tuesday evening of supposed convulsions. The mother put the child in bed at evening time and about six o'clock found the child in a dying state. Death shortly followed. The police-sergeant examined the body and found no marks of violence, and having reported the case to the coroner that officer deemed an inquest unnecessary."

We think the story of "supposed convulsions" ought to have been inquired into, and do not see how this could be done satisfactorily without the aid of a medical man. If the question of overlaying only was present in the coroner's mind he might be right to hold no inquest where the circumstances had nothing especially suspicious about them. At 6 P.M. the child could not have been overlaid, at 6 A.M. it might have been, and the extract does not define the hour.

OBSTETRIC FEES AND OBSTETRIC ENGAGEMENTS.

To the Editors of THE LANCET.

SIRS,—I venture to submit the enclosed newspaper extract to you as bearing on the general interest of the profession, and to ask your opinion whether the judge's ruling expresses the law correctly. According to his decision an engagement to attend a woman in her confinement is binding neither upon her nor upon the practitioner. Is this in reality the case?

I am, Sirs, yours faithfully,

Jan. 9th, 1898. M.D.

[ENCLOSURE.]

"An important decision affecting the retaining and feeing of medical men was delivered at Greenwich County Court by Judge Addison yesterday. The case was one in which a doctor named Scott, of Evelyn-street, Deptford, sued a labourer named Pascoe, also of Evelyn-street, Deptford, for the recovery of a sum of 15s., being a fee in lieu of attendance upon the defendant's wife during her confinement. Mr. Scard, who appeared for the plaintiff, said the defendant's wife engaged him to attend her professionally during her confinement. Instead she engaged someone else and plaintiff now sued for the recovery of the fee in respect of his engagement.

"Defendant said he never engaged the plaintiff and never gave his wife permission to pledge his credit.

"The Judge held that even if the husband had himself engaged the plaintiff and subsequently saw fit to engage someone else the doctor had no remedy. How could he charge for work he never did? Lawyers, and even those of the higher branch of that profession, would be only too glad to recover fees in similar cases; but they could not and neither could a doctor. There might be the argument that the plaintiff had "booked" the engagement, but that would not support his claim as the booking of it would be merely for the purpose of jogging his memory. Notwithstanding an engagement the plaintiff would have been free on the date of its fulfilment not to have done so had he chose and the defendant would have had no claim against him. The point was an important one and he was bound to hold, in his interpretation of the law, that in such cases no claim could be made. Plaintiff would, therefore, be non-suited and there would be costs for the defendant."

*** We have dealt with this matter in a leading article.—ED. L.

THE HEALTH OF PRINCE BISMARCK.

IN connexion with the recently and widely reported death of Prince Bismarck we have received a letter from Mr. John Carter, of 6A, New Cavendish-street, W., in which he says that he has just forwarded a specially constructed Bath-chair to the illustrious statesman. We note with pleasure that when Germany wants to buy a really good thing in invalid furniture she has to come to England.

"MR. HALL HAINS'S DEFENCE FUND."

To the Editors of THE LANCET.

SIRS,—The following additional subscriptions have been received. I shall be glad to receive others.

I am, Sirs, yours faithfully,

HERBERT CARRE-SMITH,
Hon. Secretary and Treasurer to the Fund.

3, Turnham-green-terrace, Chiswick, W., Jan. 11th, 1898.

	£	s.	d.
Amount previously acknowledged	83	8	6
Mr. J. B. Lawford F.R.C.S. Eng.	1	1	0
Mr. H. F. E. Harrison L.R.C.P., M.R.C.S. ...	1	1	0
Mr. John C. Unthoff, M.D. Lond., F.R.C.S. Eng....	2	2	0
Mr. J. Batterham, F.R.C.S. Eng.	1	1	0
Mr. Ernest Hart, D.C.L. (the late)	2	2	0
Mr. William Steer, M.R.C.S.	0	10	0
Mr. J. V. Denne, L.R.C.P., M.R.C.S. ...	0	10	6
Mr. William Travers, M.D. Durh., F.R.C.S. Eng....	2	2	0
Mr. Thomas E. Dobbs, L.R.C.P. Irel.	0	10	0

THE PAYMENT OF MEDICAL MEN AT CORONERS' INQUESTS: A NICE POINT.

To the Editors of THE LANCET.

SIRS,—I should like an opinion from you on the following case which is only one phase of the old subject concerning medical men and their fees at coroners' inquests. I am the assistant medical officer at an asylum. Some two or three months ago the dispenser (resident on the premises) died under circumstances which necessitated an inquest. At the coroner's order I made a post-mortem examination and gave evidence. The coroner, who was most courteous and agreeable, stated that he could not, of course, allow me any fee for the post mortem, but as the deceased was not a patient in the institution he thought he could allow me my fee for giving evidence and paid me £1 1s. The auditor of the county council now disallows my claim to any fee and I have had to refund it. Now I believe the law reads to the effect that "in the case of a person dying in a lunatic asylum, hospital," &c. The original idea of the law, I believe, meant to refer to "patients," not "persons." But what (not having the law itself before me) I am not certain about is, Does this law which prohibits the "medical officer whose duty it was to attend upon the deceased" from receiving a fee for doing a post-mortem examination also say that he is not entitled to a fee for giving his evidence? I believe it is true that "every legally qualified medical practitioner who has attended at a coroner's inquest, in obedience to a coroner's summons, is entitled to a fee of £1 1s. for giving evidence." In the Abstract of Laws in the Medical Directory for 1898, on page 30, it says that it seems doubtful whether a fee can be claimed when the inquest was held on the body of a patient who had died in an institution. Ought it not to be much less doubtful when the deceased was not a patient in the proper sense of the word. And although as medical officer it is my duty (according to the rules of the committee) to attend on the attendants when ill it is not so by law and they are at liberty to seek medical advice elsewhere, which a patient would not be. I do not want to take up more of your time, but should be glad if you can give me an opinion on this point and also say in what volume, or where, I can get the best information on the laws relating to these matters.

I am, Sirs, your obedient servant,

Jan. 10th, 1898. A. M. O.

*** We do not know any better treatise on the laws affecting the medical profession than the little prefatory notes in the Medical Directory. They are very brief but they are very comprehensive. We certainly think the auditor of the county council might have taken the same view as the coroner seeing that the dispenser was not a patient although an inmate of the asylum.—ED. L.

THE "GERTRUDE" SUIT.

To the Editors of THE LANCET.

SIRS,—Can any of your readers tell me whether it is possible to obtain in England the "Gertrude" suit for infants, devised by Professor L. Grosvenor, of Chicago, or where a full description of it is to be found?

I am, Sirs, yours faithfully,

Thirlmere, Watford, Jan. 5th, 1898. A. LESTOCK REID

Mr. Clement H. Sers.—The appointment of such a medical assessor to the coroners' courts has been suggested before. It would have its disadvantages as well as its advantages. THE LANCET has always advocated medical coroners on purpose that the situations alluded to by our correspondent should be properly dealt with as they arise.

Emigration.—The address of the emigration office is 31, Broadway, S.W., where our correspondent would probably obtain all the information he requires.

Nem. Con.—If there is no doubt of the diagnosis there might still be use for the consultation. Questions of treatment are numerous.

R. J.—The paper appeared in THE LANCET of Jan. 1st, 1898.

L. D. S.—It is usual.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Jan. 13th, 1898.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb	Remarks at 8.30 a.m.
Jan. 7	29·93	NNW	...	69	50	49	49	50	Raining
,, 8	30·06	S.	...	56	48	39	39	40	Hazy
,, 9	29·91	N.	...	47	44	40	42	43	Overcast
,, 10	30·19	N.E.	...	51	45	39	39	41	Cloudy
,, 11	30·42	W.	...	54	49	34	37	39	Foggy
,, 12	30·54	S.W.	...	55	52	39	45	47	Overcast
,, 13	30·62	SSW	...	50	50	47	48	49	Foggy

During the week marked copies of the following newspapers have been received: *Gloucestershire Echo, Eastern Daily Press, Norwich Mercury, East Anglian Daily Times, Western Morning News Norfolk Chronicle, Times of India, Birmingham Daily Gazette, East London Observer, Pioneer Mail, Guernsey Star, Herald of Wales, Builder, Peebleshire Advertiser, Yorkshire Post, Leicester Post, Sussex Daily News, Architect, Somerset County Herald, Cheshire Chronicle, Scotsman, Leeds Mercury, Northampton Mercury, Midland Times, Hampshire Independent, Liverpool Daily Post, Worcester Chronicle, Ilfracombe Gazette, Bolton Evening News, Chatham News, Lichfield Mercury, Kidderminster Shuttle, Biggleswade Chronicle, Lincoln Gazette, Bristol Mercury, Halifax Guardian, Essex Telegraph, Brighton Gazette, Sheffield Telegraph, Darwen News, Newcastle Chronicle, Montreal Star, Cape Times, South Wales Daily News, Dundee Advertiser, Bradford Daily Telegraph, Manchester Guardian, Cambridge Daily Leader, Natal Mercury, Public Health, Blackburn Standard, Kirkintilloch Gazette, Holborn Guardian, Manchester Courier, Hull News, Sanitary Record, Hertfordshire Mercury, Mining Journal, City Press, Reading Mercury, Lincolnshire Chronicle, Herald (Melbourne), Local Government Chronicle, Surrey Advertiser, Local Government Journal, Weekly Free Press and Aberdeen Herald, Liverpool Mercury, Newcastle Daily Chronicle, Shields Daily Gazette, West Middlesex Herald, &c., &c.**

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